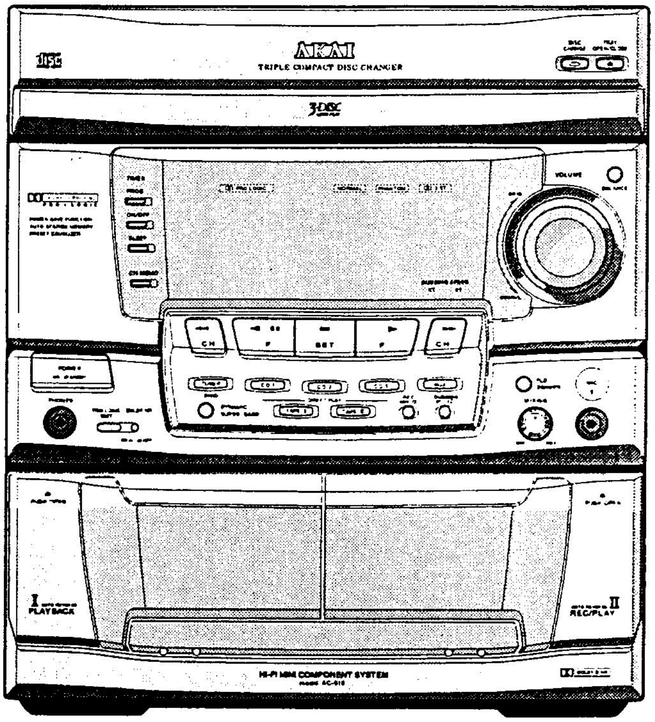
TX-410/610
(AC-410/413R/415K)
(AC-610/613R/615K)

AKAI SERVICE MANUAL


AKAI
TRIPLE COMPACT DISC CHANGER
3-DISC
VOLUME
PLAYBACK
REC/PLAY
HI-FI MINI COMPONENT SYSTEM

DOLBY B NR

COMPACT
disc
DIGITAL AUDIO

DOLBY SURROUND
PRO•LOGIC

MINI STEREO COMPONENT SYSTEM

MODEL **AC-410/413R/415K**

MODEL **AC-610/613R/615K**

MODEL **SR-410**

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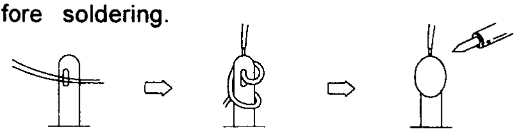
SAFETY INSTRUCTIONS

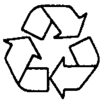
PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol parts are critical for safety. Replace them only with parts whose numbers are specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selection switches, RF cables, noise-blocking capacitors, noise-blocking filters, etc.
3. Use specified internal Wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulating Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulating sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitor, etc.), wrap ends of wires securely about the terminals before soldering.



6. Make sure that wires do not contact heat generating parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
7. Check if replaced wires do not contact sharply edged or pointed parts.
8. Also check areas surrounding repaired parts.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT



Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to check if exposed parts are acceptably insulated from the supply circuit.

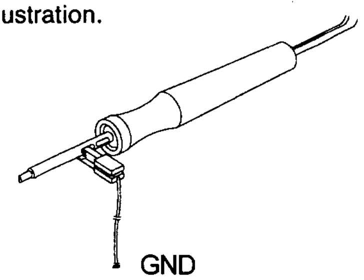
The leakage-current measurement should be done between accessible metal parts, (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resister of 1500 ohm paralleled with a 0.15 μ F capacitor, under the unit's normal working condition.

The leakage-current should be less the 0.5mA rms AC. The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch "ON" (if included). The resistance should be more than 2.2Mohms.

PRECAUTIONS IN REPAIRING

When repairing or adjusting the unit, please note the following points

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment. Make sure that there are no metal objects between the P.C board or the mecha parts and the base.
3. The Micro-Computer and the CD signal processing ICs may be damaged by static electricity or leakage from a soldering iron during repairing. While soldering, please take the precautions against leakage as in the illustration.

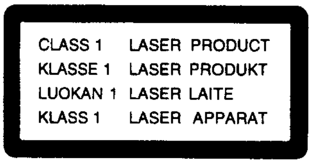


4. Do not loosen any screws in the pick-up block. Please refer to NOTE when replacing the pick up block.
5. To avoid hazardous invisible Laser Radiation, do not look at the Laser Beam (Objective lens) directly.
6. On model for some countries, laser warning labels are affixed on and inside of the unit as shown below. For your safety, read these labels carefully before repairing or adjusting the unit.

CAUTION

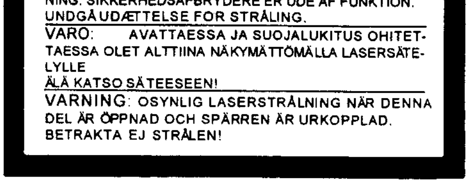
The use of controls or adjustments or the performance of procedures other than those specified herein may result in hazardous radiation.

[EUROPE, SCANDINAVIA, UK and AUSTRALIA]



CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
LUOKAN 1 LASER LAITE
KLASS 1 LASER APPARAT

Label affixed on the rear panel of the unit



CAUTION: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED, AVOID EXPOSURE TO BEAM

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING. SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDÆTTELSE FOR STRÅLING.

VARO: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLA LASERSÄTELYLLE
ÄLÄ KATSO SÄTEESEEN!

VARNING: OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN!

Label affixed on the CD MECHA BLOCK

INFORMATION

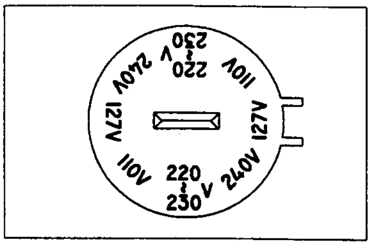
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbol	Principal Destination
A	USA
B	UK
E	Europe (except, UK)
S	Australia
V	Germany
U	Universal
Y*	Custom version

VOLTAGE CONVERSION(U Y Model only)

Before connecting the power cord, set the VOLTAGE SELECTOR located on the rear panel of the AC-415K/615K so that the correct voltage for your area is indicated.



[U5,U8, Y6, Y7]

TEST MODE

Various kind of test modes are installed in this unit's microcomputer in order to test them on the production line. Following test modes among the various test modes can be used for adjustment, operation check or maintenance. To terminate the test mode, simply press the "POWER ON/STANDBY " button or disconnect the AC power cord from the AC outlet.

1. DECK TEST MODE

This test mode can be used for tape speed adjustment as well as bias oscillator frequency adjustment in TAPE DECK section.

While pressing and holding the "TAPE II" and "▶" (F) buttons, connect the AC power cord to AC outlet. The function turns to "TAPE I" and "DUBX1" as well as " I ▶", "II ▶" tape direction indicators on the FLD light when this mode is engaged.

2. DECK CLEANING MODE

This test mode can be used for cleaning of the TAPE DECK mechanism.

Because, this mode enables engaging of the playback, fast forward (FF), and rewind (RWD) modes without a cassette tape, it makes the cleaning (such as the capstan shaft, magnetic head, pinch roller etc.,) easier.

While pressing and holding the "TAPE I" and "▶" (F) button, connect the AC power cord to the AC outlet. The "TAPE I", "I ▶", "II ▶" tape direction indicators on the FLD light when this mode is engaged.

SPECIFICATIONS

[Tuner Section]

Frequency range

FM	87.5-108MHz(50KHz step)
MW	530-1710KHz(U8) 531-1602KHz (except U8)
LW	144-288KHz(1KHz step) (E1/E3/B1 only)
SW	3.8-12.5MHz(5KHz step) (Y7 only)

USABLE SENSITIVITY

FM	16.2dBf IHF,3%THD (except E1/E3/B1) 20.2dBf IHF,3%THD (E1/E3/B1)
MW	500uV/m
LW	800uV/m
SW	800uV/m

S/N Ratio(IHF)

FM	MONO 75dB, STEREO 65dB
MW	40dB
LW	30dB
SW	30dB
Stereo separation	40dB(at 1KHz)

[AMPLIFIER Section]

Power output	(AC-410/413R/415K) 25W+25W(6ohms, 10%THD, EIAJ) 20W+20W (6ohms, 1%THD, DIN) (AC-610/613R/615K) 30W+30W(6ohms, 10%THD, EIAJ) 25W+25W (6ohms, 1%THD, DIN)
Input sensitivity (AUX IN)	310mV/47KΩ
channel separation	70dB
Frequency response	10Hz-100KHz(-3dB)

[DECK SECTION]

Track system	4track, 2channel system
Frequency response	40Hz-15KHz (Normal tape, +3dB/7dB) 40Hz-16KHz(Cro2 tape, +3dB/-7dB)
Wow & Flutter	0.09% (WRMS), 0.15%(DIN)
S/N ratio	Dolby B 63dB (5KHz) Dolby off 53dB (Cro2 tape)
Total harmonic distortion	less than 0.5%(normal tape at 315Hz)
Channel separation	43dB

[CD SECTION]

Pick up system	3Beam Laser
Sampling frequency	44.1KHz
Error correction system	Cross interleave read solomon
Number of channels	2Channe
Frequency response	20Hz-20KHz
Wow & Flutter	Below measurable limits
S/N ratio	83dB
Total harmonic distortion	0.035% (at 1KHz)
Channel separation	73dB(at 1KHz)
Dynamic range	82dB (at 1KHz)

[GENERAL]

Power requirement	
E1/E3/B1/S1	AC 220-230V/50Hz
U5/U8/Y6/Y7	AC110/127/220-230/240V, 50/60Hz
Power consumption	80W/AC-410/413R/415K, 130W/AC-610/613R/615K
Weight	7.3Kg/AC-410/413R/415K, 8.2Kg/AC-610/613R/615K

[SPEAKER SECTION]

ITEM	SR-410
System Constructions	3-way 3-speakers
Woffer Unit	135mm Cone type
Midrange Unit.	57mm Cone type
Tweeter Unit	20mm dome type (piezo)
System Impedance	6Ω
Maxium Power Input	50w
Sensitivity	more than 87dB/w/m
Frequency Response	60Hz-20KHz
Harmonic Distortion	less than 3%
Enclosure Type	bass reflex type
Units Layout	L/R mirror layout
Dimensison	193(W)X305(H)X245.5(D)
Net Weight	3.3Kg/pc

For improvement purposes, specifications and design are subject to change without notice.
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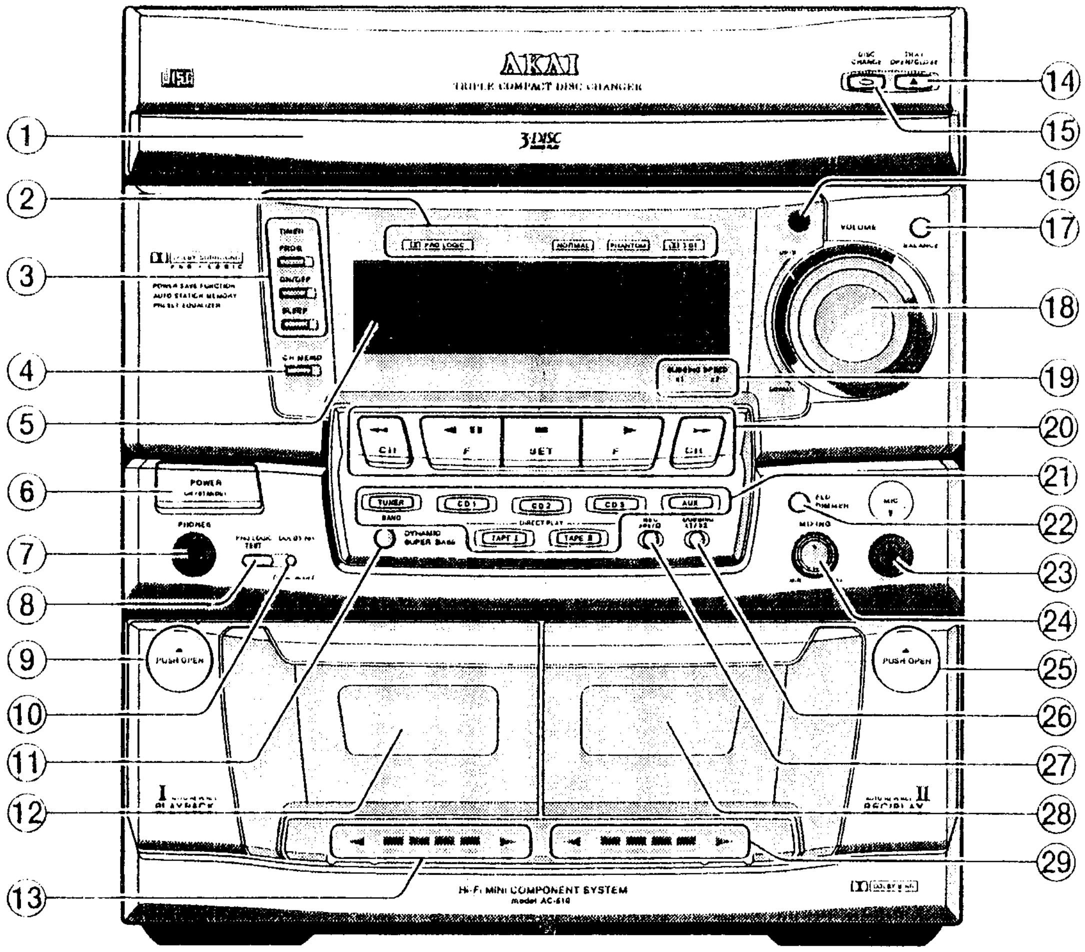
CONTROLS

Ⓐ MAIN UNIT


AKAI
TRIPLE COMPACT DISC CHANGER
DISC CHANGE
TRAY OPEN/CLOSE
3 DISC
TIMER
PROG
ON/OFF
SLEEP
CH MEMO
PRO LOGIC
NORMAL
PHANTOM
VOLUME
BALANCE
DUBBING SPEED x1 x2
CH
SET
CH
POWER
PHONES
TUNER
CD 1
CD 2
CD 3
AUX
TAPE I
TAPE II
DYNAMIC SUPER BASS
MIXING
MIC
PUSH OPEN
PUSH OPEN
I
II
Hi-Fi MINI COMPONENT SYSTEM
model AC-610
①
②
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⑥
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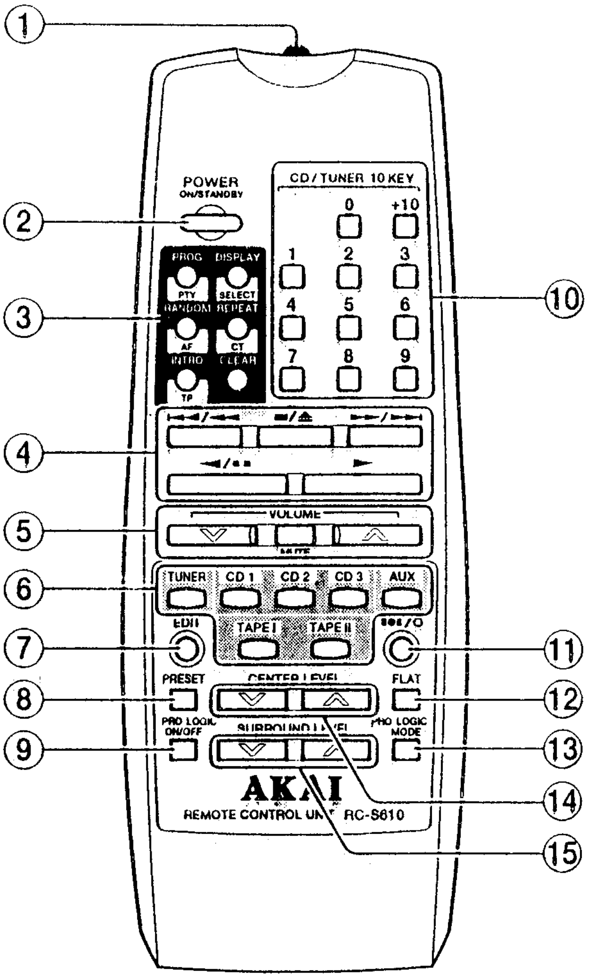
1. Disc tray
2. Dolby PRO LOGIC mode indicators (AC-610/613R/615K)
3. TIMER operation buttons
4. CH MEMO button
5. System FL display
6. POWER ON/STANDBY button
7. PHONES jack
8. PRO LOGIC TEST button (AC-610/613R/615K)
9. Tape deck I PUSH OPEN button
10. DOLBYNR button
11. DYNAMIC SUPER BASS button
12. Tape deck I cassette compartment
13. Tape deck I direction indicator and transportation indicator
14. TRAY OPEN/CLOSE button
15. DISC CHANGE button
16. Remote sensor
17. BALANCE button
18. Volume control
19. DUBBING SPEEDx1, x2 indicators
20. Multi-function buttons
21. Input source select buttons
22. Dimmer button (AC-410/413R/610/613R)
    KARAOKE button (AC-415K/615K)
23. MIC jack
24. Mixing control
25. Tape-deck II PUSH OPEN button
26. DUBBINGx1/x2 button
27. REC button
28. Tape deck II cassette compartment
29. Tape deck II direction indicator and transportation indicator

Ⓑ Remote Control


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
POWER
ON/STANDBY
CD / TUNER 10 KEY
0
+10
1
2
3
4
5
6
7
8
9
PROG
DISPLAY
PTY
SELECT
RANDOM
REPEAT
AF
CT
INTRO
CLEAR
TP
VOLUME
MUTE
TUNER
CD 1
CD 2
CD 3
AUX
EDIT
TAPE I
TAPE II
PRESET
CENTER LEVEL
FLAT
PRO LOGIC ON/OFF
SURROUND LEVEL
PRO LOGIC MODE
AKAI
REMOTE CONTROL UNIT RC-S610

When using the remote control for operation, make sure that it is pointing to the remote sensor window on the main unit.

1. Transmitting window
2. POWER ON/STANDBY button
3. CD operation buttons/RDS buttons
   (The RDS function is only available on the AC-413R/613R)
4. Multi-function buttons
5. VOLUME buttons
6. Input source select buttons
7. EDIT button
8. PRESET button
9. PRO LOGIC ON/OFF button
10. CD/TUNER 11 KEY buttons
11. Rec/pause button
12. FLAT button
13. PRO LOGIC MODE button
14. CENTER LEVEL buttons
15. SURROUND LEVEL buttons

* The 9, 13, 14 and 15 buttons are not included on the RC-S510 remote control (for AC-410/413R/415K model operation).

Note:

The remote control can not be used for some functions that require the combined pressing of two tape transportation buttons (intro scan or auto play for example). Please Use the Main unit's multi-function buttons for the operation of such functions.

I. DISASSEMBLY

1-1. REMOVE OF MAIN COVER

1) Remove the seven screws on back and six screws on both sides.
2) Remove the MAIN COVER

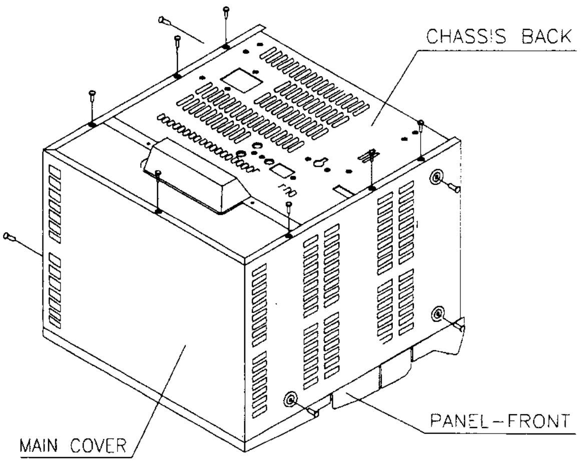

CHASSIS BACK
PANEL-FRONT
MAIN COVER

Fig. 1-1

1-2. REMOVE OF CD MECHA & FRONT PANEL

1) Remove the CD door
2) Remove the four screws (A) on both sides and disconnect three connectors and the flat cable from the TC-DK P.C.B.
3) Remove the CD player block
4) Remove the three screws (B) and two screws (C) on both sides.
5) Remove the FRONT PANEL

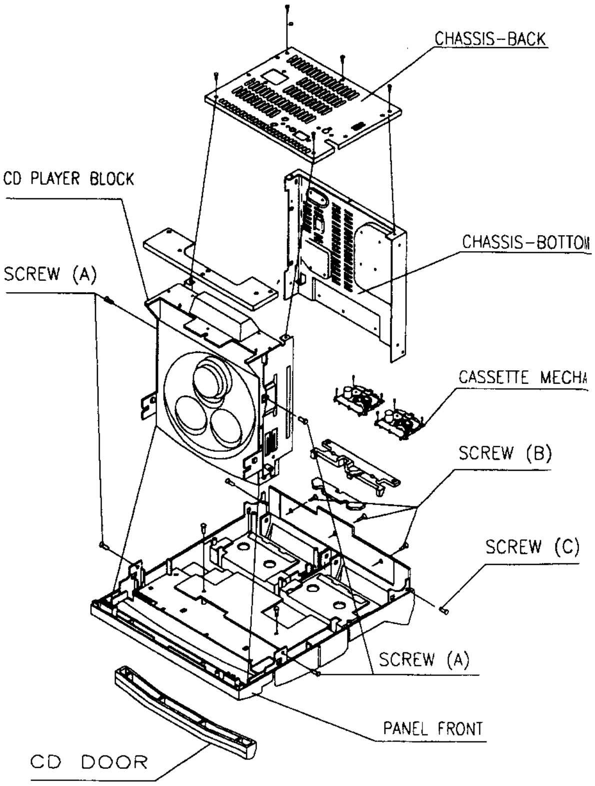

CHASSIS-BACK
CD PLAYER BLOCK
SCREW (A)
CHASSIS-BOTTOM
CASSETTE MECHA
SCREW (B)
SCREW (C)
SCREW (A)
PANEL FRONT
CD DOOR

Fig. 1-2

II. PRINCIPAL PARTS LOCATION

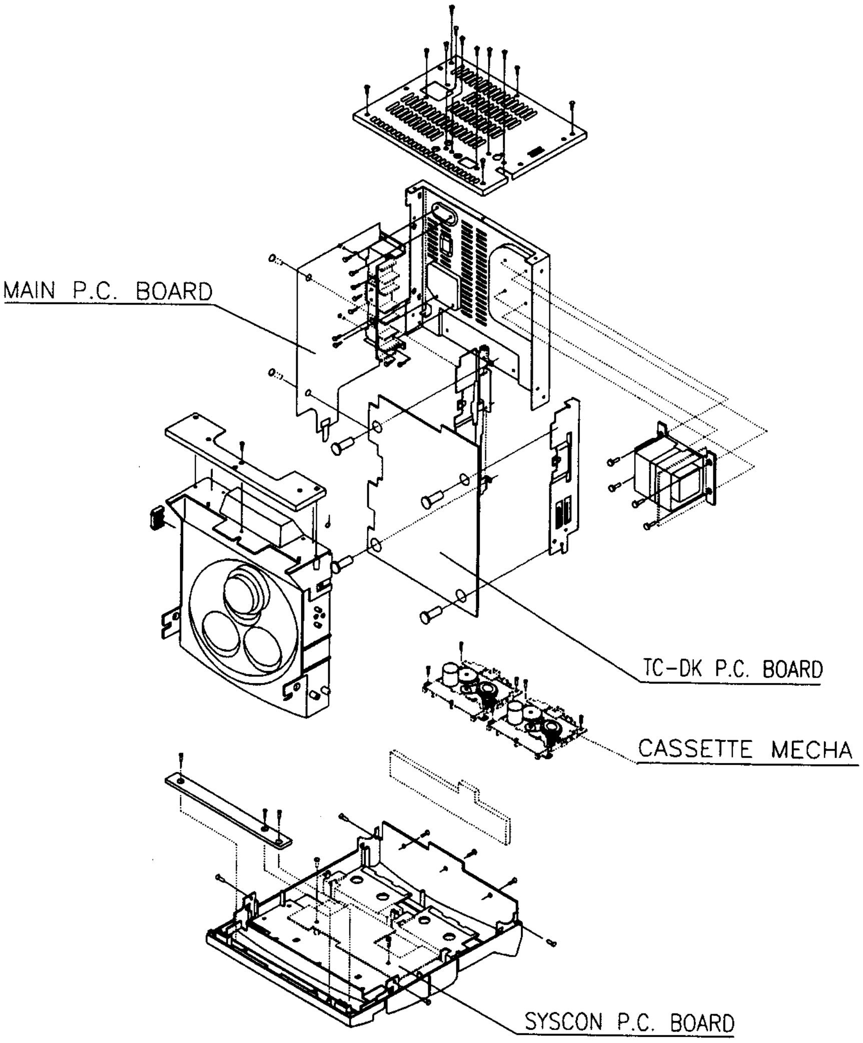

MAIN P.C. BOARD
TC-DK P.C. BOARD
CASSETTE MECHA
SYSCON P.C. BOARD

Fig. 2-1

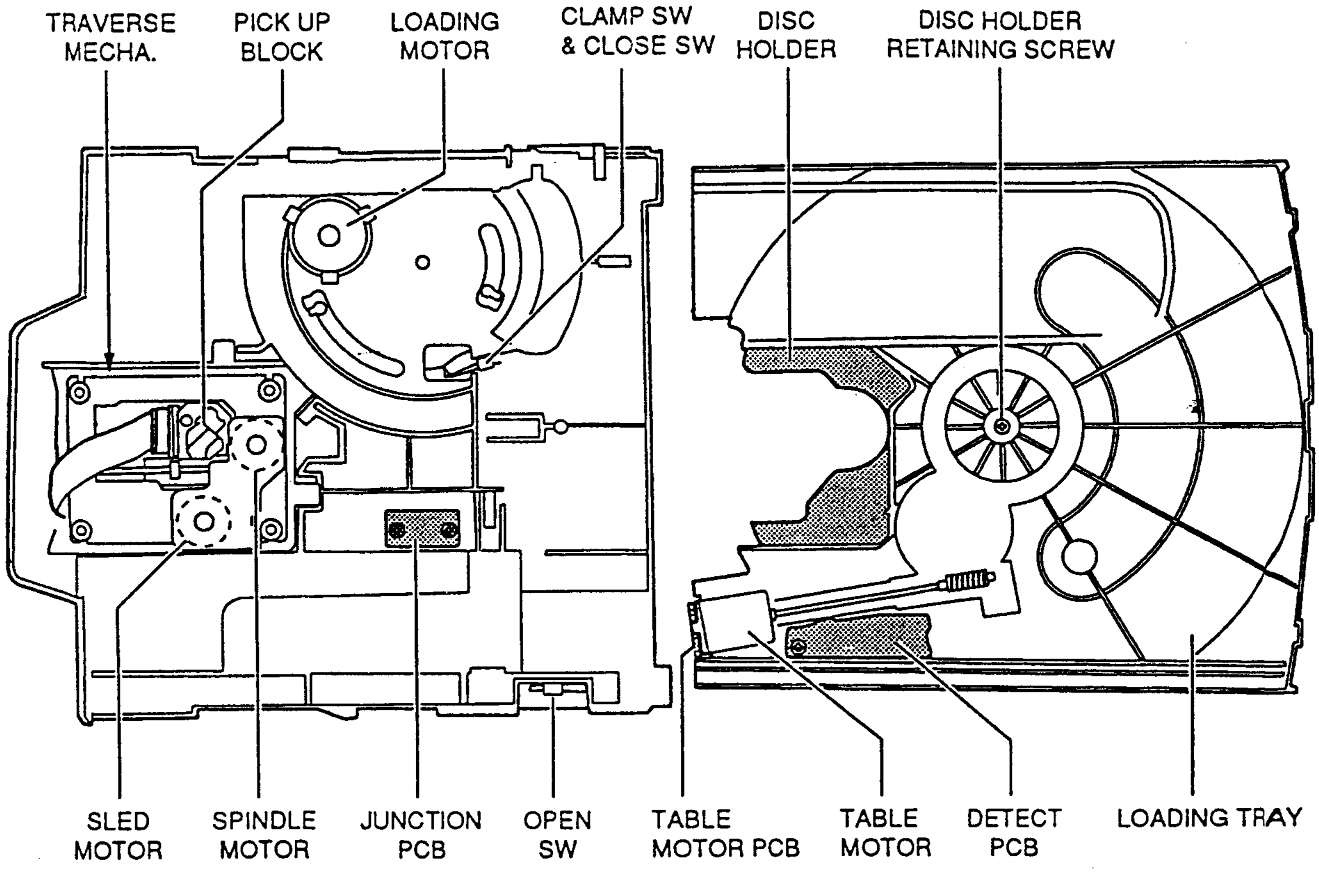

TRAVERSE MECHA.
PICK UP BLOCK
LOADING MOTOR
CLAMP SW & CLOSE SW
DISC HOLDER
DISC HOLDER RETAINING SCREW
SLED MOTOR
SPINDLE MOTOR
JUNCTION PCB
OPEN SW
TABLE MOTOR PCB
TABLE MOTOR
DETECT PCB
LOADING TRAY

Fig. 2-2 CD PIAYER BLOCK

III. DISASSEMBLY OF THE MAIN COMPONENTS

3-1. CD PLAYER BLOCK

* Remove the CD PLAYER BLOCK before proceeding.

3-1-1. Removal of the TRAVERSE MECHA.

1) Remove the TRAVERSE COVER by releasing the two tabs in the direction of the arrow as shown in Fig. 3-1.

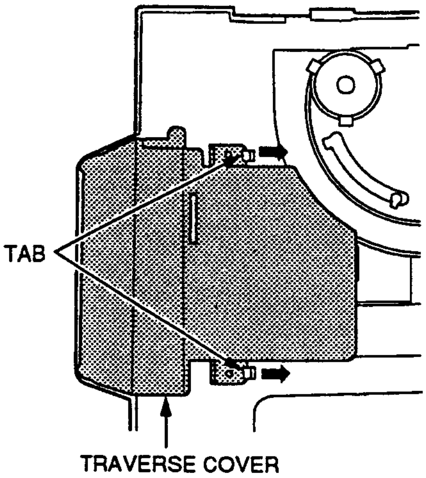

TAB
TRAVERSE COVER

Fig. 3-1

2) Short the circuit on the PICK UP BLOCK with solder as shown in Fig. 3-2.

Note : To protect the laser diode from damage caused by high voltage static electricity, a part of the PCB on the PICK UP BLOCK has to be shorted before disconnecting the connectors. After replacement, be sure to connect the two connectors and then remove the solder of the shorted circuit before turning the power ON.

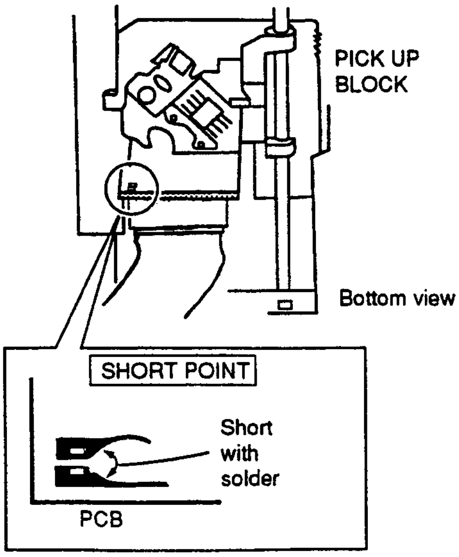

PICK UP
BLOCK
Bottom view
SHORT POINT
Short
with
solder
PCB

Fig. 3-2

3) Disconnect the two connectors carefully.

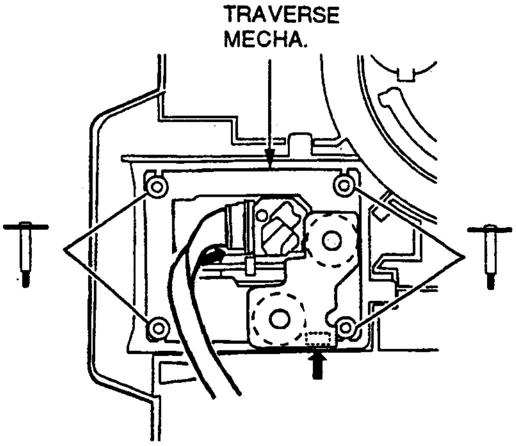

TRAVERSE
MECHA.

Fig. 3-3

4) Remove the four retaining screws, then remove the TRAVERSE MECHA.
5) Proceed in the reverse order for installation but never unsolder the shorted circuit before connecting the three connectors.

3-1-2. Replacement of the SLED MOTOR

1) Remove the TRAVERSE MECHA (refer to section 3-1-1).
2) Unsolder the leads of the SLED and SPINDLE MOTORs then remove the MOTOR PCB.

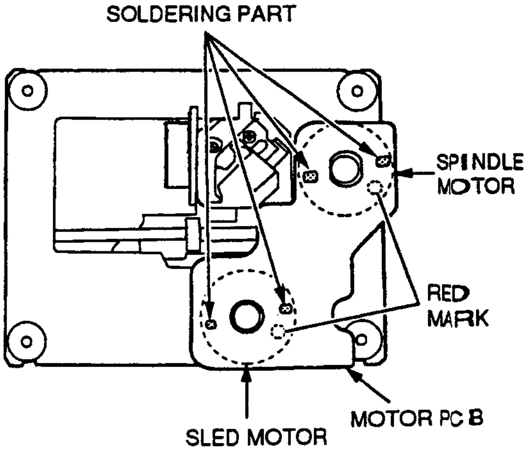

SOLDERING PART
SPINDLE
MOTOR
RED
MARK
MOTOR PCB
SLED MOTOR

Fig. 3-4

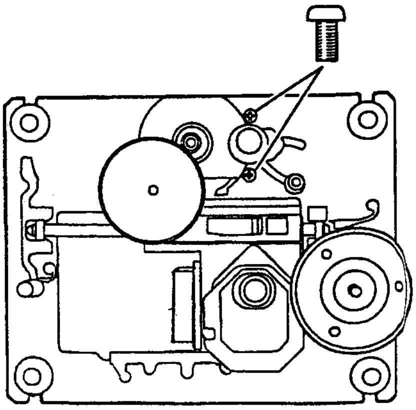


Fig. 3-5

3) Remove the two retaining screws, then remove the SLED MOTOR.
Next, extract the plastic gear from the motor shaft and attach it onto the new motor's shaft.
4) Reassemble in the reverse order.

About the SPINDLE MOTOR:
Replacement of the SPINDLE MOTOR itself is not recommended, because adjustment of the TURN TABLE height is quite critical and requires the use of a special jig.

3-1-3. Replacement of the PICK UP BLOCK

1) Remove the TRAVERSE MECHA (refer to section 3-1-1).
2) While pressing the Ⓐ stopper upwards, pull the SLIDE SHAFT to the right to remove the PICK UP BLOCK, then replace the PICK UP BLOCK.

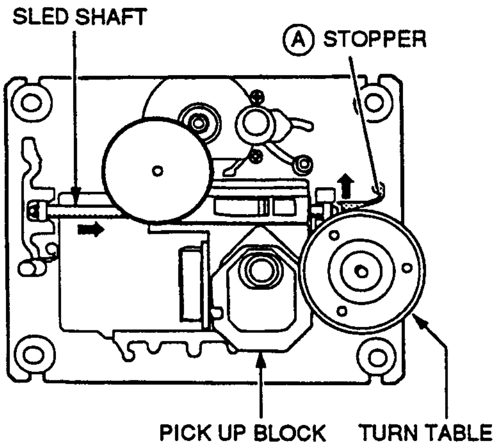


Fig. 3-6

3) Reassemble in the reverse order.

3-1-4. Replacement of the LOADING MOTOR

1) Slide the protruding part of the GEAR HOLDER PART in the direction of the arrow, then pull out the TRAY BLOCK.

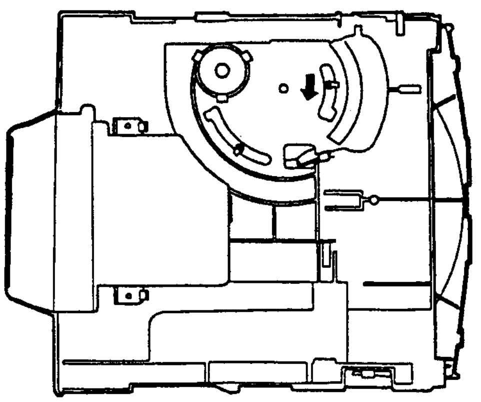


Fig. 3-7

2) Unhook the LOADING BELT with tweezers.

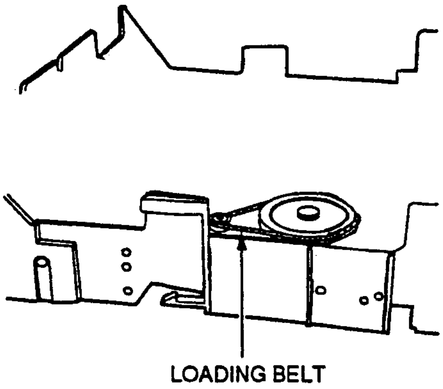


Fig. 3-8

3) Unsolder the lead wires of the LOADING MOTOR with a soldering iron.
4) While releasing the LOADING MOTOR's three retaining hooks, push the motor pully part down with your middle finger to remove the LOADING MOTOR, then replace it.

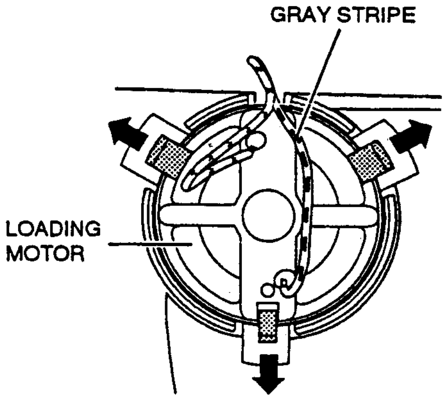


Fig. 3-9

5) Reassemble in the reverse order. Make sure that the wire with the gray stripe is connected to the motor's O marked terminal when soldering.

3-1-5. Removal of the TRAY BLOCK

1) If the TRAY BLOCK is in the "in" position, slide the protruding part of the GEAR HOLDER PART in the direction of the arrow and pull out the TRAY BLOCK slowly (refer to Fig. 3-7).
2) In order to disengage the two stoppers, carefully press the Ⓐ part of the TRAY BLOCK downwards while pulling the TRAY BLOCK out as shown in Fig. 3-10.

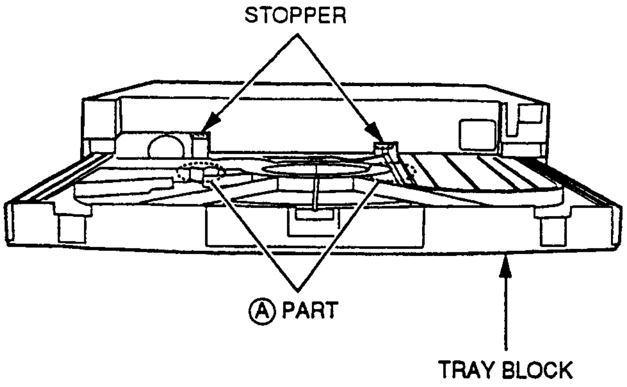

STOPPER
Ⓐ PART
TRAY BLOCK

Fig. 3-10

4) Remove the TRAY BLOCK by pulling it out carefully.
5) Reassemble in the reverse order for installation. When reattaching the TRAY BLOCK to the chassis, carefully align the guides on both sides of the TRAY BLOCK with their corresponding rails on the chassis. Also, make sure that any one of the reference marks on the DISC HOLDER aligns with the reference mark on the LOADING TRAY.

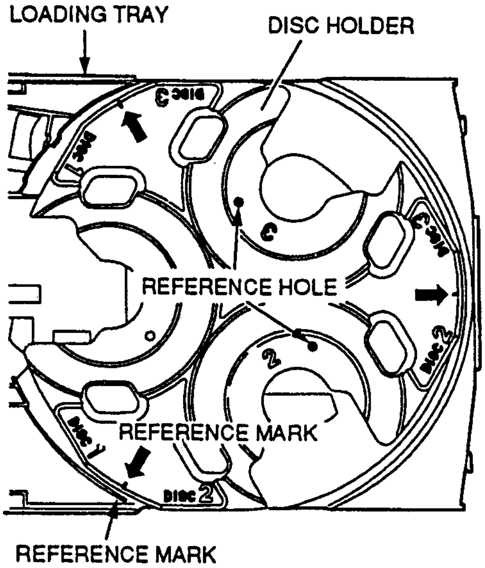

LOADING TRAY
DISC HOLDER
REFERENCE HOLE
REFERENCE MARK
DISC 2
REFERENCE MARK

Fig. 3-11

Next, move the head of the GEAR HOLDER PART in the direction of the arrow before engaging the stoppers as shown in Fig. 3-12.

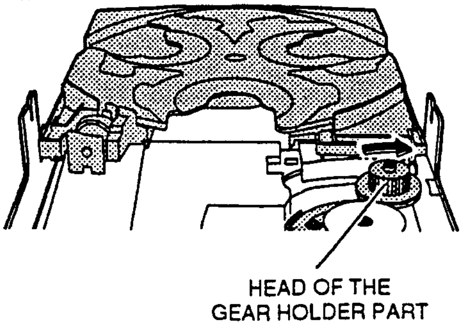

HEAD OF THE
GEAR HOLDER PART

Fig. 3-12

3-1-6. Replacement of the TABLE MOTOR

1) Remove the TRAY BLOCK (refer to section 3-1-5).
2) Remove the DISC HOLDER retaining screw then remove the DISC HOLDER.

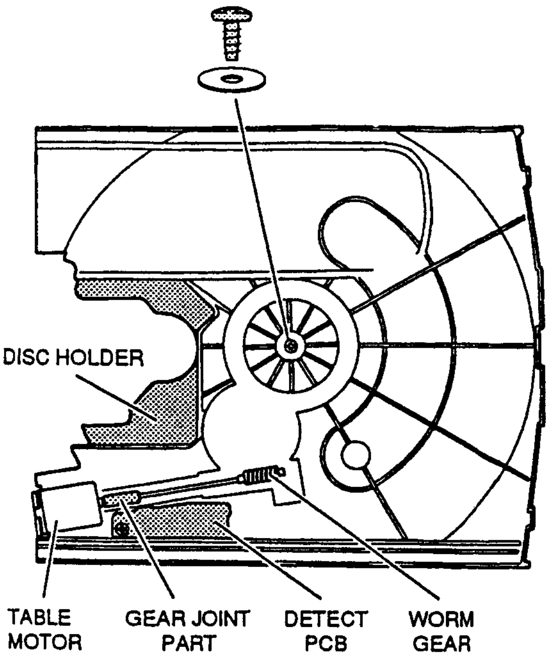

DISC HOLDER
TABLE
MOTOR
GEAR JOINT
PART
DETECT
PCB
WORM
GEAR

Fig. 3-13

3) Unsolder the leads of the TABLE MOTOR and remove the TABLE MOTOR PCB.

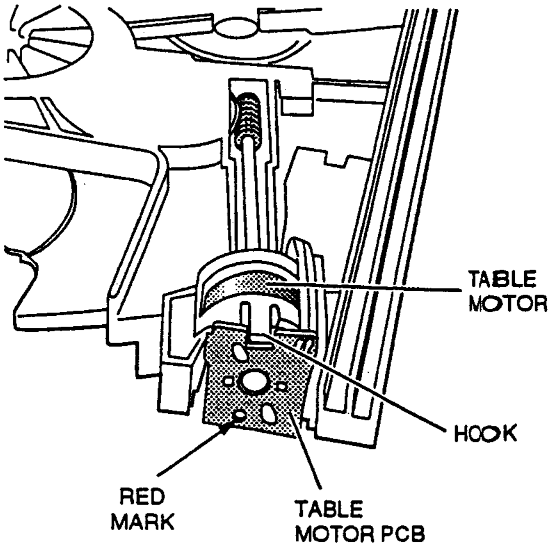


TABLE
MOTOR
HOOK
RED
MARK
TABLE
MOTOR PCB

Fig. 3-14

4) Remove the TABLE MOTOR by pulling it out while opening the TABLE MOTOR retaining hook. Next, remove the WORM GEAR BLOCK by pulling the GEAR JOINT PART out and attach it to the new motor as shown in Fig. 3-13.
5) Reassemble in the reverse order.
   - When soldering the TABLE MOTOR PCB on the TABLE MOTOR, the TABLE MOTOR's red mark must be visible through the hole on the TABLE MOTOR PCB.
   - When attaching the DISC HOLDER on the LOADING TRAY, make sure to place the DISC HOLDER so that any one of the three reference marks aligns with the reference mark on the LOADING TRAY (any two reference holes on the DISC HOLDER align with the corresponding reference holes on the LOADING TRAY accordingly). (Refer to Fig. 3-11)

3-2. TAPE-I & TAPE-II MECHANISM BLOCK

3-2-1. Removal of the MECHANISM BLOCK

1) Remove the FRONT PANEL BLOCK.
2) Remove the four screws for each of the TAPE-I and TAPE-II MECHANISM BLOCKs then remove the MECHANISM BLOCKs from the FRONT PANEL BLOCK.

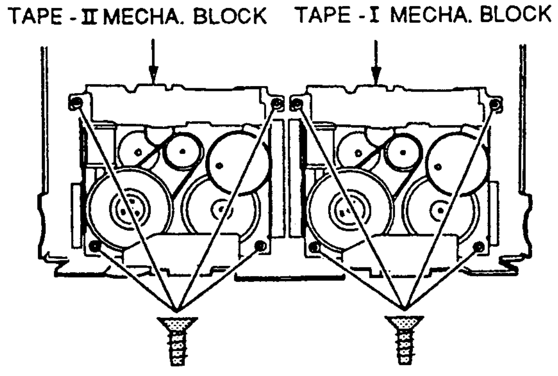


Fig. 3-15

3-2-2. Replacement of the CAPSTAN MOTOR

NOTE : After replacement, tape speed adjustment must be performed.

1) Unsolder the flat cable on the CAPSTAN MOTOR with a soldering iron.
2) While pressing the INTER-LOCK LEVER in the direction of the arrow, remove the two Ⓑ screws and then remove the CAPSTAN MOTOR.

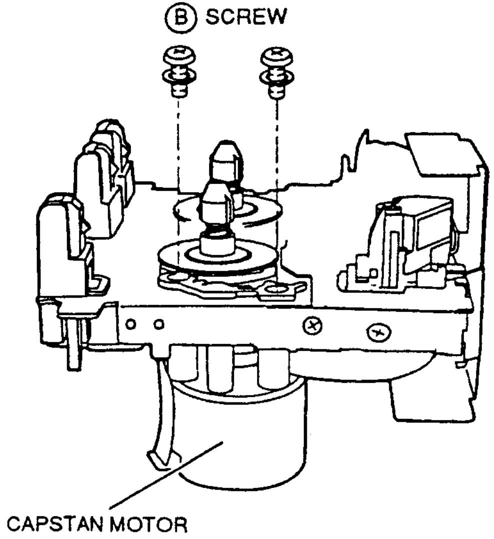


Fig. 3-16

3) Install a new motor and re-assemble in the reverse order for installation.

3-2-3. Replacement of the FR BELT

1) Unthread the MAIN BELT and replace the FR BELT as shown in Fig. 3-17.
2) Proceed in the reverse order for installation.

3-2-4. Replacement of the MAIN BELT

1) Remove the CAPSTAN MOTOR
2) Replace the MAIN BELT and re-assemble in the reverse order for installation.

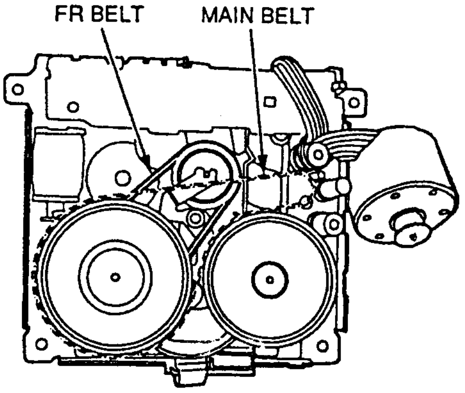


Fig. 3-17

3) After replacement, check the tape speed and if the result is not satisfactory, tape speed adjustment must be performed.

3-2-5. Replacement of the PINCH ROLLER BLOCK

1) Extract the PINCH ROLLER BLOCK upwards while releasing the pinch roller retaining hook in the direction of the arrow.

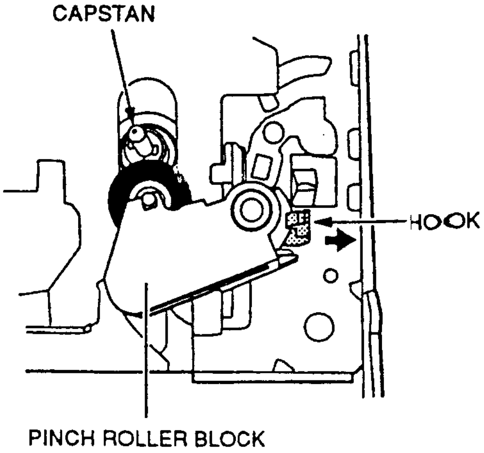


Fig. 3-18

2) Replace the PINCH ROLLER BLOCK and re-assemble in the reverse order. Attach the spring in the correct position when placing the PINCH ROLLER BLOCK.

3-2-6. Replacement of the PB HEAD OR REC/PB HEAD

1) Remove the two Ⓐ screws and remove the HEAD SHIELD PLATE.

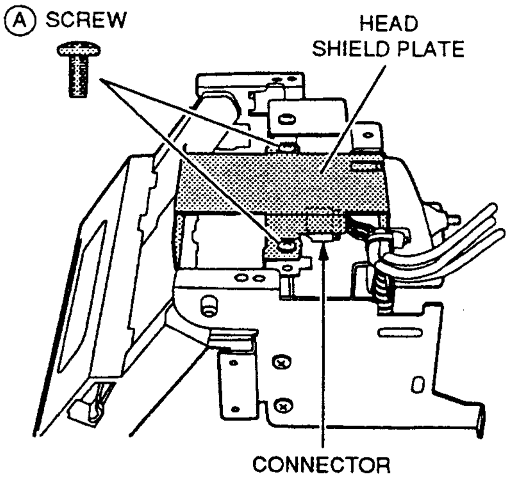

Ⓐ SCREW
HEAD SHIELD PLATE
CONNECTOR

Fig. 3-19

2) Disconnect the connector on the CONNECTOR PCB and remove the PCB retaining screw.

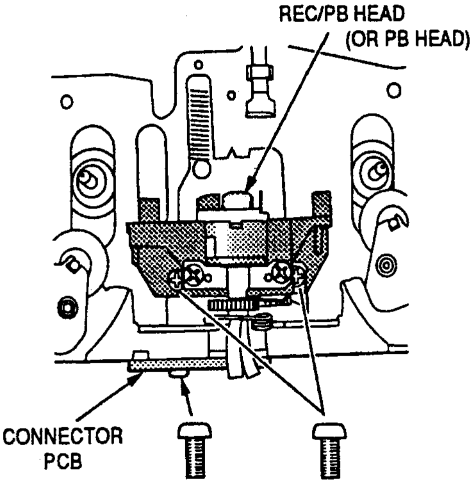

REC/PB HEAD (OR PB HEAD)
CONNECTOR PCB

Fig. 3-20

3) Remove the two head retaining screws and remove the HEAD BLOCK.
4) Reassemble in the reverse order. After replacement, demagnetize the HEAD then perform head azimuth adjustment.

IV. MECHANICAL ADJUSTMENT

4-1. ADJUSTMENT OF THE HEAD AZIMUTH ALIGNMENT

1) Connect an oscilloscope to the L-ch and R-ch speaker terminals of the unit. Set the VOLUME control on the FRONT PANEL at the appropriate level (ie, the output level is not too low or too high).
2) Play back a 10 kHz (–15 dB), HEAD AZIMUTH ALIGNMENT TEST TAPE (TF-106CH) then adjust the HEAD AZIMUTH ALIGNMENT Ⓐ (FWD PLAY) and Ⓑ (REV PLAY) SCREWs respectively so that the waveform level of both the L-ch and R-ch are at maximum and also they are in the same phase in both FWD and REV directions. (Use a sharp edge philips type screwdriver that is de-magnetized for adjustment.)
   Perform the adjustment on both the TAPE-I and TAPE-II heads if necessary.

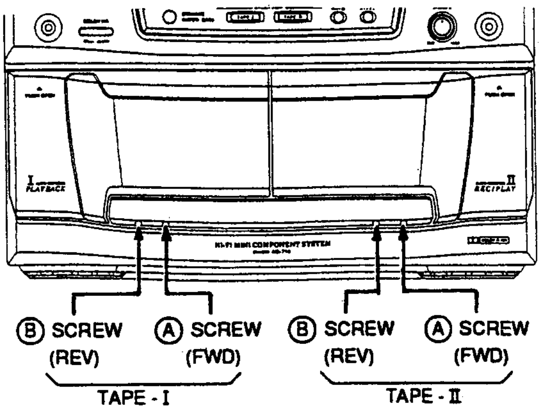


Fig. 4-1

V. ELECTRICAL ADJUSTMENT

5-1. TAPE DECK SECTION

NOTE :

1) The following adjustment should be performed in the "DECK test mode".
   To engage the DECK test mode, connect the AC power cord to the AC outlet while pressing the "TAPE-II" and "▶ (F)" buttons together.
   When the "DECK test mode" is engaged, the "DUBX1" indicator on the FL display will light.
2) When performing the tape speed adjustment, observe the following notes.
   - Adjustment should be started more than 30 seconds after the power is switched ON.
   - Adjustment should be made on X2 speed mode first then adjust the normal speed mode.
   - Adjustment should be made in the forward direction.
3) To disengage the "DECK test mode", press the "POWER" button or unplug the AC power cord from the AC outlet.

STEP | ADJUSTMENT

1. Test tape/input signal
2. Mode
3. Check point, adjustment part
4. Remarks (•) and result (∗)

→ Adjustment Part

- - → Test Point

1 | TAPE-I (X2) TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-I, PLAY
3. TP-R.OUT, VR3100
4. • Connect a frequency counter to the TP-R.OUT (or L.OUT) and press the "DUBBING" button to engage double speed.

∗ 6,340 ± 20 Hz

2 | TAPE-I NORMAL TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-I, PLAY
3. TP-R.OUT, VR3101
4. • Connect a frequency counter to the TP-R.OUT and press the "▶ (F)" button again to resume normal tape speed.

∗ 3,150 ± 10 Hz

3 | TAPE-II (X2) TAPE SPEED

1. 3,150 Hz test tape (TF-110CT)
2. TAPE-II, PLAY
3. TP-R.OUT, VR3102
4. • Press the "TAPE-II" button and play back the test tape.
   • Connect a frequency counter to the TP-R.OUT and press the "DUBBING" button to engage double speed.

∗ 6,320 ± 20 Hz

4 | TAPE-II NORMAL TAPE SPEED

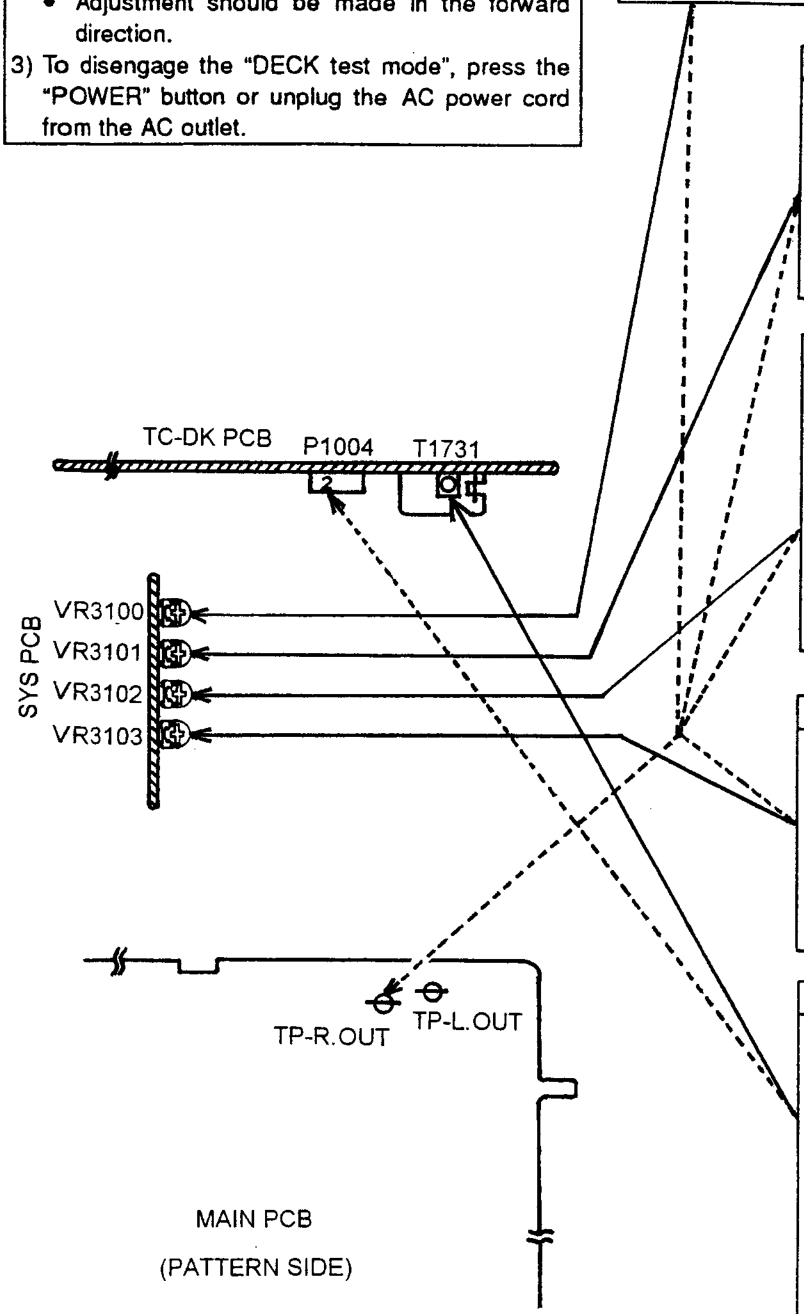
1. 3,150 Hz test tape (TF-110CT)
2. TAPE-II, PLAY
3. TP-R.OUT, VR3103
4. • Connect a frequency counter to the TP-R.OUT and press the "▶ (F)" button again to resume normal tape speed.

∗ 3,140 ± 10 Hz

5 | BIAS OSC FREQUENCY

1. CrO2 type blank tape
2. TAPE-II, REC
3. P1004 ② pin, T1731
4. • Connect a frequency counter between P1004 pin and GND. (10 : 1 probe should be used to avoid affecting the measurement.)
   • Start a recording (press the "REC" button then press the "▶" button).
   The "AUX" source indicator appears automatically.

∗ 100.0 ± 0.2 kHz



5-2.CD PLAYER SECTION

TEST MODE FOR CD PLAYER'S OPERATION

Some adjustments of the CD PLAYER section are automatically carried out by the micro computer.

If the CD player section is defective and it is necessary to partially check the operation, "CD TEST" mode can be used while repairing.

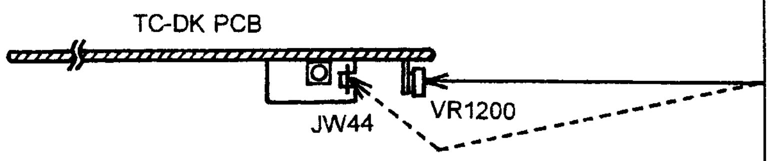
Engaging the "CD TEST" MODE

While pressing and holding both the "CD1" and "▶(F)" buttons, plug in the AC power cord to the AC outlet.

Note :

- During "CD TEST" mode, only the DISC"1" ⏏ open/close button can be used for loading. So, place a disc on "TRAY 1".
- Proceed testing by pressing the "CD1" button once for each testing step.
- To disengage the "CD TEST" mode, press the "POWER ON/STANDBY" button or disconnect the AC power cord from the AC outlet.

DISPLAY	FUNCTION
T0 (TEST-0)	Initial condition of the "CD TEST" mode.
T1 (TEST-1)	Perform "focus search".
T2 (TEST-2)	Turn on the "focus servo".
T3 (TEST-3)	Mode of the "E-F balance" adjustment.
T4 (TEST-4)	E-F balance adjustment is carried out automatically and its data value is displayed on the FLD.
T5 (TEST-5)	Mode of the "Tracking gain" adjustment.
T6 (TEST-6)	Tracking gain adjustment is carried out automatically and its data value is displayed on the FLD.
T7 (TEST-7)	Normal playback mode is engaged.



1 FOCUS OFFSET

1. Test disc (SONY TYPE-III)
2. Play back
3. JW44 and VR1200
4. Connect the hot side probe of an AC milivoltmeter to JW44 on the BIAS OSC PCB and GND side probe to the chassis. Adjust the VR1200 on the TC-DK PCB until indication of the AC milivoltmeter is maximum.

VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the part No., Model No. and the description of each part. Otherwise, the nondelivery of the part or the delivery of a wrong part may result.
2. Please make sure that part No. is correct when ordering.
   If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in parts list of preliminary service manual may have been the subject of changes, please use this parts list for all future reference.

[NOTE]

1. This parts list lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts list shows those parts in the parts list which are considered particularly important for service.
3. Parts not shown in the parts list and "Common List for Service Parts" will not in principle be supplied.

WARNING

⚠ (*) INDICATED SAFETY CRITICAL COMPOMETS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVEERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. REMOTE P.C. BOARD

REF. NO.	PARTS No.	DESCRIPTION
CF001	007-300455-63	RESONATOR CRK455 455KHz
IC001	033-806122-13	REMOTE TRANSMITTER UPD6122G-001
LED001	130-670303-00	INFRA RED EMITINT DIODE EL-1L1
PCB	090-385604-01	REMOTE BOARD T=1.6mm 94HB (46X119mm)
Q001	031-278050-03	TRANSISTOR NPN KTC8050C
D001-004	030-134148-00H	D SILICON IN4148
	210-010101-01S	REMOTE BATTERY COVER

2. SYS CON P.C. BOARD

REF. NO	PARTS No.	DESCRIPTION
D3001-3002/3004-3015/3079-3088	030-320131-01H	D SILICON H 1SS131T T52
D3100-3109/3111-3112/3017/3110		
D3120(for AC-610/613R/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3018-3031	030-560034-10	D LED MYB34C YELLOW
D 3032-3038	030-540034-04	D LED MGB34D GREEN
D 3039-3042/3046/3048-3054	030-560031-00	D LED MYB31CA YELLOW
D 3043-3045	030-510031-00	D LED MSB31TA RED
D 3055-3059(for AC-610/613R/615K)	030-540034-04	D LED MGB34D GREEN
D 3114(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3115(S1/Y7)	030-320131-01H	D SILICON H 1SS131T T52
D 3116(for AC-413/613R)	030-320131-01H	D SILICON H 1SS131T T52
D 3117(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 3119(E1/B1/RE1/E3)	030-320131-01H	D SILICON H 1SS131T T52
D 3121(for AC-410/413R/415K)	030-320131-01H	D SILICON H 1SS131T T52
D 3200/3205/3206/3211	030-560031-00	D LED MYB31CA YELLOW
D 3201-3204/3207-3210	030-540034-04	D LED MGB34D GREEN
IC3001	034-B00401-12	IC M38197MA-148FP TX2-SYS64-1
IC3002	033-509121-29	IC PST-9121 T05
IC3003	033-002402-42	IC XL24C02P
IC3004	033-202011-14	IC TA2011S
IC3005-3007/3200	034-304094-18	IC BU4094BCF
IC3008(for AC-610/613R/615K)	034-304094-18	IC BU4094BCF
IC3100	033-304094-18A	IC BU4094BC
IC3101(for AC-413/613R)	034-106579-33	IC SAA6579T-T
IC3102(for AC-413/613R)	034-307073-16	IC LC7073M
IN3001	035-131640-01	IND FL 16-BT-40GK
J 3001	061-121406-00	PHONE J HSJ1406-01-010 3.5
J 3002(for AC-415/615K)	061-121406-00	PHONE J HSJ1406-01-010 3.5
J 3003/3033	060-406123-99	SOCKET 00 6216 006 000 6P
J 3022	060-423124-99	SOCKET 00 6216 023 100 23P
P 3001	060-103204-07	PLUG S3B-PH-K WHT 3P
P 3011	060-422124-99	PLUG TKC-V22P-A1 22P
PH3001	036-600446-01	DETECTOR SPS-446-1
SW3001	040-002410-20	SW ROTARY EC16B24304
SW3002	046-080001-00	SW PUSH VPS-800
TR3003-3005/3107-3110/3124-3126	031-440144-05V	DTR DTC144ES(47-47) T05
TR3101/3103/3113-3120/3122-3123	031-211048-25V	TR 2SA1048 Y,GR T05
TR3100/3102/3104-3106	031-221425-00V	TR 2SB1425 S,E T05
TR3111(for AC-413/613R)	031-211048-25V	TR 2SA1048 Y,GR T05
TR3112(for AC-413/613R)	031-440144-05V	DTR DTC144ES(47-47) T05
TS3001-3022/3300/3301	046-110201-00	SW TACT 1.T-1102A 160GM
TS3027(for AC-610/613R/615K)	046-110201-00	SW TACT 1.T-1102A 160GM
VR3001	011-202298-00	VR ROTARY RK11K1140 L17.5 B202
VR3100/3102	112-222311-05	R S-FIX V T05EVNDCAA3 0.10W222
VR3101/3103	112-102311-05	R S-FIX V T05EVNDCAA3 0.10W102

W 3001	063-552701-03	WA PH-SAN L270 3P
W 3007(for AC-410/413R/415K)	077-622107-15	WF 2468#26 P2.0 C09 L100 15P
W 3007A(for AC-610/613R/615K)	077-622107-16	WF 2468#26 P2.0 C09 L100 16P
W 3008	077-622107-16	WF 2468#26 P2.0 C09 L100 16P
W 3009	077-626107-13	WF 2468#26 P2.0 C09 L100 13P
W 3010	077-626117-10	WF 2468#26 P2.0 C09 L100 10P
X 3001	007-208000-06	OSC CE CST8.00MTW 8.000MHZ
X 3002	037-032768-10M	OSC X'TAL C-002RX 32.768KHZ
X 3100(for AC-413/613R)	007-204000-06	OSC CE CST4.00MGW 4.000MHZ
X 3101(for AC-413/613R)	037-004332-10Z	OSC X'TAL HC-49/U-S 4.33200MHZ

3. MAIN P.C. BOARD

REF. NO.	PARTS No.	DESCRIPTION
D 001	⚠ 030-310040-02	D SILICON DBF40C 200/4.0A
D 003-004	030-410056-30H	D ZENER MTZJ5.6C T52
D 005-008	⚠ 030-310152-06	D SILICON RL152M11S15 100/1.5A
D 021/023/081-083/141	030-314002-10H	D SILICON 1N4002-F T52 100/1A
D 022/024/041-042/047/130-131 D 133/142/153-154/156-157	030-320131-01H	D SILICON H 1SS131T T52
D 025	030-410056-30H	D ZENER MTZJ5.6C T52
D 043/062/721-723	030-410062-10H	D ZENER MTZJ6.2A T52
D 044/151-152	030-410075-10H	D ZENER MTZJ7.5C T52
D 045	030-410051-20H	D ZENER MTZJ5.1B T52
D 046	030-410015-03H	D ZENER MTZJ15B T52
D 084	030-410330-00H	D ZENER MTZJ33B T52
D 085	030-410056-20H	D ZENER MTZJ5.6A T52
D 132/134	030-410220-00H	D ZENER MTZJ22D T52
D 155	030-410051-10H	D ZENER MTZJ5.1A T52
D 322(for AC-610/613R/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 531-533(for AC-615K)	030-320131-01H	D SILICON H 1SS131T T52
D 551-554(for AC-415/615K)	030-320131-01H	D SILICON H 1SS131T T52
D 724	030-320131-01H	D SILICON H 1SS131T T52
D 751-753(for AC-410/413R/415K)	030-410062-10H	D ZENER MTZJ6.2A T52
F1(for AC-410/413R/415K)	⚠ 082-220630-06	FUSE TIME 218 250V 630MA
F2(for AC-415K)	⚠ 082-220630-06	FUSE TIME 218 250V 630MA
F3(for AC-410/413R/415K)	⚠ 082-222500-06	FUSE TIME 218 250V 2.50A
F4(for AC-410/413R/415K)	⚠ 082-222500-06	FUSE TIME 218 250V 2.50A
F1(for AC-610/613R/615K)	⚠ 082-222000-06	FUSE TIME 218 250V 2.00A
F2(for AC-615K)	⚠ 082-222000-06	FUSE TIME 218 250V 2.00A
F3(for AC-610/613R/615K)	⚠ 082-225000-06	FUSE TIME 218 250V 5.00A
F4(for AC-610/613R/615K)	⚠ 082-225000-06	FUSE TIME 218 250V 5.00A
IC 021	033-507805-00B	IC ML7805FA 5V/1A
IC 101	033-304094-18A	IC BU4094BC
IC 201/202	033-218751-38	IC SI18751
IC 203/204(AC-610/613R/615K)	033-218751-38	IC SI18751
IC 501(AC-415K/610/613R/615K)	033-K65843-12	IC M65843AFP
IC 581	033-904558-30A	IC NJM4558L
IC 602(for AC-610/613R/615K)	034-K02177-74	IC NJM2177AFB3
IC 701	034-262422-12	IC M62422FP
IC 751/761 (for AC-610/613R/615K)	033-209412-14	IC TC9412P
IC 761A(for AC-410/413R/415K)	033-009260-14	IC TC9260P
IC 801	033-304094-18A	IC BU4094BC
IC 802(for AC-610/613R/615K)	033-304094-18A	IC BU4094BC
J 011	060-422122-99	SOCKET TKC-V22X-A1 22P
J 201(for AC-610/613R/615K)	061-123000-00	PHONE J HSJ3000-01-010 3.5
J 201A(for AC-410)	061-122000-00	PHONE J HSJ2000-01-010 3.5

J 301(only for AC-610/613R/615K)	061-780243-00	PIN J HSP-243V-06 3P
L 202(for AC-410/413R/610/613R)	084-070410-00	COIL BALUM OPW/5-8-14-5H2
L 203(for AC-610/613R)	084-070410-00	COIL BALUM OPW 15-8-14-5H2
L 801	002-300002-09	COIL LF LF-4D-102 102UH
P 006	060-116204-07	PLUG S16B-PH-K WHT 16P
P 013	060-107045-20	PLUG PS2438-7 7P
P 801	060-102045-20	PLUG B2P-3-VH P7.92 2P
R 004-005/043	⚠ 013-478205-75	R OMF H S10FLR ERG12SP1/2WR47J
R 021/080/103/106/109/112	⚠ 013-109205-75	R OMF H S10FLR ERG12SP1/2W1R0J
R 047-048	⚠ 013-221205-75	R OMF H S10FLR ERG12SP1/2W221J
R 060-063	⚠ 013-392205-75	R OMF H S10FLR ERG12SP1/2W392J
R 132/135-136/141	⚠ 013-151205-75	R OMF H S10FLR ERG12SP1/2W151J
R 137	⚠ 013-478205-75	R OMF H S10FLR ERG12SP1/2W562J
R 213/263	⚠ 013-479305-75	R OMF H S12 FLR ERG1SP 1W 4R7J
R 233/283(for AC-610/613R/615K)	⚠ 013-479305-75	R OMF H S12 FLR ERG1SP 1W 4R7J
TM 201	061-780401-00	TERMINAL PUSH CJ-9007-060 4P
TR 022/024/026/043/131	031-440114-05V	DTR DTC114ES(10-10) T05
TR 023/025	031-220621-00V	TR 2SB621 R,S T05
TR 021/041/082/101-104/130/132	031-211048-25V	TR 2SA1048 Y,GR T05
TR 044/081	031-221375-00	TR 2SB1375
TR 061	031-440114-60V	DTR DTC114TS(10) T05
TR 134(for AC-610/613R/615K)	031-241785-00	TR 2SD1785
TR 134A(for AC-410/413R/415K)	031-241796-00	TR 2SD1796
TR 045/135/151/152/154/155/201/251	031-232458-25V	TR 2SC2458 Y,GR T05
TR 137	031-221258-00	TR 2SB1258
TR 137A	031-221257-00	TR 2SB1257
TR 153	031-430114-19V	DTR DTA114TS(10) T05
TR 158	031-440114-60V	DTR DTC114TS(10) T05
TR 221/271(for AC-610/613R/615K)	031-232458-25V	TR 2SC2458 Y,GR T05
TR 320	031-430114-05V	DTR DTA114ES(10-10) T05
TR 321(for AC-610/613R/615K)	031-430114-05V	DTR DTA114ES(10-10) T05
TR 322(for AC-610/613R/615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 531(for AC-615K)	031-430114-19V	DTR DTA114TS(10) T05
TR 532/533/535/536/539-541 (for AC-615K)	031-440144-60	DTR DTC144TS(47) T05
TR 534/537/538(for AC-615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 551/552(for AC-415K/615K)	031-440114-60V	DTR DTC114TS(10) T05
TR 601-604(AC-610/613R/615K)	031-430114-19V	DTR DTA114TS(10) T05
W 801(for AC-610/613R/615K)	063-502401-11	WA SDN L200 6P
W 913	063-553201-07	WA SDN-VH #22 L320 7P
X 501(only for AC-610)	007-002000-40	OSC CE CSA2.00MG 2.000MHZ
X 551(for AC-415K/615K)	007-200400-03	OSC CE DCRK400 400.000KHZ

4. TC-DK P.C. BOARD

REF. NO.	**PARTS No.**	**DESCRIPTION**
D 1300-1304	030-314002-10H	D SILICON 1N4002-F T52 100/1A
D 1400/1401/1721	030-320131-01H	D SILICON H 1SS131T T52
D 1501	030-410051-10H	D ZENER MTZJ5.1A T52
FL1611/1621/1661/1671	007-100100-09	COIL TUN 1 100Z-121 100.00KHZ
IC1001	033-314052-21	IC MC14052BCP
IC1002/1210	033-904558-30A	IC NJM4558L
IC1100	033-601782-64Q	IC CXA1782BQ
IC1200	033-K02508-64	IC CXD2508AQ
IC1300	033-209258-61	IC KA9258D
IC1400	033-206247-18	IC BA6247
IC1601	034-101897-64	IC CXA1897Q
IC1701/1702	034-304094-18	IC BU4094BCF
J 1001	061-782421-00	PIN J HSP-242V1-05 2P

J 1002	060-423123-99	SOCKET 00 6216 023 000 23P
J 1100	060-416109-99	SOCKET 00 6232 016 006 16P
L 1501(S1/U5/U8/Y6/Y7/A3)	005-229056-01H	COIL FIX 1 LAP02TA T26 2R2J
L 1721	005-101056-00H	COIL FIX 1 LAP02TA T26 101J
P 1004	060-108205-27	PLUG B8B-PH-K WHT 8P
P 1005	060-103205-27	PLUG B3B-PH-K WHT 3P
P 1400	060-105204-27	PLUG S5B-PH-K WHT 5P
P 1401	060-107204-29	PLUG S7B-PH-K WHT 7P
P 1402	060-106206-27	PLUG S6B-PH-K WHT 6P
T 1731	002-800002-09	COIL OSC 1 C1047
TM1501	061-480312-00	TERMINAL LEVER HSP-312V-02
TR1100/1400/1632/1682/1743	031-211048-25V	TR 2SA1048 Y,GR T05
TR1300/1301	031-221425-00V	TR 2SB1425 S,E T05
TR1302/1601/1621/1651/1671/ TR1644/1721/1722	031-440114-05V	DTR DTC114ES(10-10) T05
TR1401/1501/1611-1622/1661-1662/1701	031-232458-25V	TR 2SC2458 Y,GR T05
TR1502(for AC-413R/613R)	031-250304-06V	TR FET 2SK304 E,F T05
TR1613/1663	031-241012-06V	TR 2SD1012-V-SPA-AC F,G,H T05
TR1631/1681/1665	031-430114-19V	DTR DTA114TS(10) T05
TR1641/1642/1691/1692 (for AC-610/613R/615K)	031-430114-19V	DTR DTA114TS(10) T05
TR1643/1693(for AC-615K)	031-430114-19V	DTR DTA114TS(10) T05
TR1645/1695(for AC-415K/615K)	031-232458-25V	TR 2SC2458 Y,GR T05
TR1723-1725	031-231815-26V	TR 2SC1815 Y,GR T05
TR1726(E1/B1/RE1/E3)	031-211048-25V	TR 2SA1048 Y,GR T05
TR1731-1732(E1/B1/RE1/E3)	031-232458-25V	TR 2SC2458 Y,GR T05
TR1771-1774(for AC-610/613R/615K)	031-440114-05V	DTR DTC114ES(10-10) T05
TU1501(E1/B1/RE1/E3)	103-146601-04	TUNER TFCB3E720A FM/MW/LW
TU1501A(S1/U5/U8/Y6)	103-146401-04	TUNER TFCB1U717A FM/AM
TU1501B(Y7)	103-146101-04	TUNER TFCB1S713A FM/MW/SW
VR1200	112-103311-05	R S-FIX V T05EVNDCAA3 0.10W103
W 1006	063-551001-16	WA PH L100 16P
W 1400/1401	077-322087-09	WF 2468#26 P2.0 C09 L80 9P
X 1200	007-201693-06	OSC CE CSA16.93MHZ
D 4410	030-600048-00	D LED GL4800
J 4410	060-405124-99	SOCKET 00 6216 005 100 5P
J 4411	060-405123-99	SOCKET 00 6216 005 000 5P
TR4410	031-594800-00	TR PHOTO PT4800
W 4410	077-622077-02	WF 2468#26 P2.0 C09 L70 2P
W 4412	063-555301-05	WA SAN-PH L530 5P

5. P.C. BOARD BLOCK

REF. NO.	PARTS No.	DESCRIPTION
1-a(AC-410 B1/E1/E3)	771-385001-01	CD/TUNER/TAPE P.C. BOARD
1-b(AC-410 S1)	771-385001-02	CD/TUNER/TAPE P.C. BOARD
1-c(AC-413R E1)	771-385001-03	CD/TUNER/TAPE P.C. BOARD
1-d(AC-415K U5/U8/Y6)	771-385001-04	CD/TUNER/TAPE P.C. BOARD
1-e(AC-415K Y7)	771-385001-05	CD/TUNER/TAPE P.C. BOARD
2-a(AC-410 B1/E1/E3)	771-385001-06	KEY/DISPLAY P.C. BOARD
2-b((AC-410 S1)	771-385001-07	KEY/DISPLAY P.C. BOARD
2-c(AC-413R E1)	771-385001-08	KEY/DISPLAY P.C. BOARD
2-d(AC-415K U5/U8/Y6)	771-385001-09	KEY/DISPLAY P.C. BOARD
2-e(AC-415K Y7)	771-385001-10	KEY/DISPLAY P.C. BOARD
3-a(AC-410 B1/E1/E3/S1)	771-385001-11	POWER AMP/MAIN P.C. BOARD
3-b(AC-413R E1)	771-385001-12	POWER AMP/MAIN P.C. BOARD
3-c(AC-415K U5/U8/Y6/Y7)	771-385001-13	POWER AMP/MAIN P.C. BOARD
4(for TX-410/510/610/710 of all version)	771-385601-13	REMOTE P.C. BOARD
5-a(AC-610 B1/E1/E3)	771-385501-01	CD/TUNER/TAPE P.C. BOARD
5-b(AC-610 S1)	771-385501-02	CD/TUNER/TAPE P.C. BOARD

5-c(AC-613R E1)	771-385501-03	CD/TUNER/TAPE P.C. BOARD
5-d(AC-615K U5/U8/Y6)	771-385501-04	CD/TUNER/TAPE P.C. BOARD
5-e(AC-415K Y7)	771-385501-05	CD/TUNER/TAPE P.C. BOARD
6-a(AC-610 B1/E1/E3)	771-385501-06	KEY/DISPLAY P.C. BOARD
6-b((AC-610 S1)	771-385501-07	KEY/DISPLAY P.C. BOARD
6-c(AC-613R E1)	771-385501-08	KEY/DISPLAY P.C. BOARD
6-d(AC-615K U5/U8/Y6)	771-385501-09	KEY/DISPLAY P.C. BOARD
6-e(AC-615K Y7)	771-385501-10	KEY/DISPLAY P.C. BOARD
7-a(AC-610 B1/E1/E3/S1)	771-385501-11	POWER AMP/MAIN P.C. BOARD
7-b(AC-613R E1)	771-385501-12	POWER AMP/MAIN P.C. BOARD
7-c(AC-615K U5/U8/Y6/Y7)	771-385501-13	POWER AMP/MAIN P.C. BOARD

6.YMC03 P.C. BOARD

REF.NO.	**PARTS NO.**	**DESCRIPTION**
D4410	030-600048-00	D LED GL4800
TR4410	031-594800-00	TR PHOTO PT4800
J4410	060-405124-99	SOCKET 006216023100 5P
J4411	060-405123-99	SOCKET 006216023808 5P

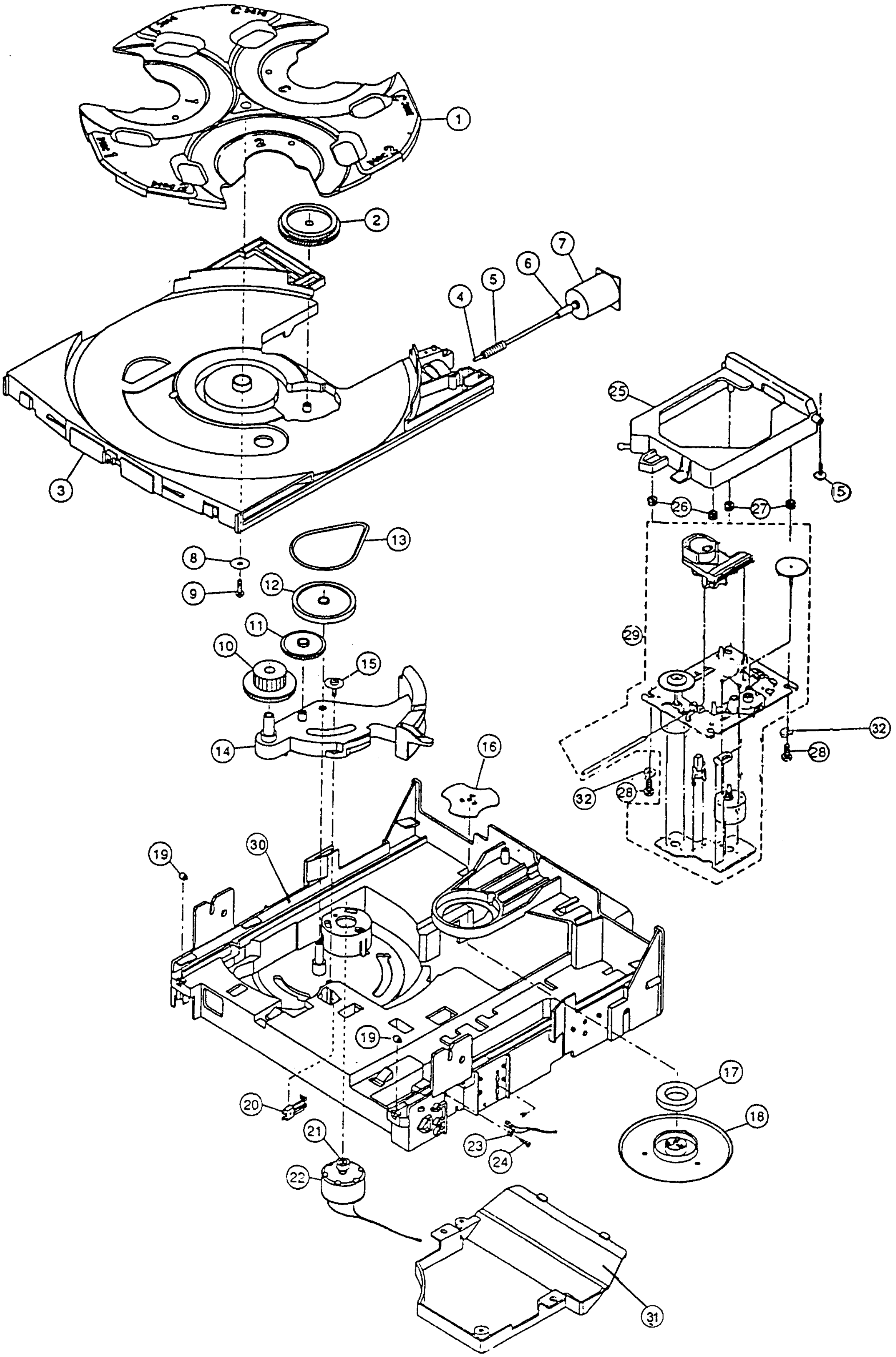
7. ACCESSARY

REF. NO.	**PARTS. No.**	**DESCRIPTION**
1	790-010101-01	REMOCON RC-S610
2	790-010102-01	REMOCON RC-S510

8. CD MECHANISM

REF. NO.	PARTS NO.	DESCRIPTION
1	229-385602-01S	HOLDERDISC
2	288-385601-01Z	GEAR WORMWHEEL TABLE
3	220-385602-01S	TRAY LOADING
4	438-385601-01	SHAFT
5	288-385604-01Z	WORM
6	239-385601-01Z	JOINT
7	743-037012-54	MOTOR PF-370CA-15370 12V
8	634-150030-08	PW30X150X080 THK
9	619-300208-00	TAPING SCREW 3X1.25X8mm
10	288-385605-01Z	GEAR LOADING (A)
11	288-385606-01Z	GEAR LOADING(B)
12	288-385602-01Z	PULLEY GEAR
13	334-385604-01	BELT LOADING
14	288-385603-01S	HOLDER GEAR
15	615-300308-00	BW/T 3X8mm
16	428-385603-01	PLATE CLAMPER
17	489-383801-01	MAGNET DISC CLAMP
18	229-385606-01S	CLAMPER
19	259-385602-01Z	ROLLER
20	047-102127-00	LEAF SWITCH LSA-2127E
21	243-385601-01Z	PULLEY
22	743-050009-54	MOTOR RF-500TB-14415 D/V
23	047-101119-01	LEAF SWITCH ISA-1119H
24	610-260208-10	R/T 2.6X8mm
25	220-385601-01S	HOLDER TRAVERSE
26	334-385606-01	INSULATOR
27	334-385606-01	INSULATOR
28	610-200216-00	SELF-SCREW TAPING B/T 2.0X16
29	747-021301-02	MECHA TRAVERSE KSM213CCM
30	220-385603-01R	CHASSIS MAIN
31	219-385601-01Z	CD MECH COVER
32	634-100027-05	METAL WASHER 10X2.7X0.5

CD MECHANISM BLOCK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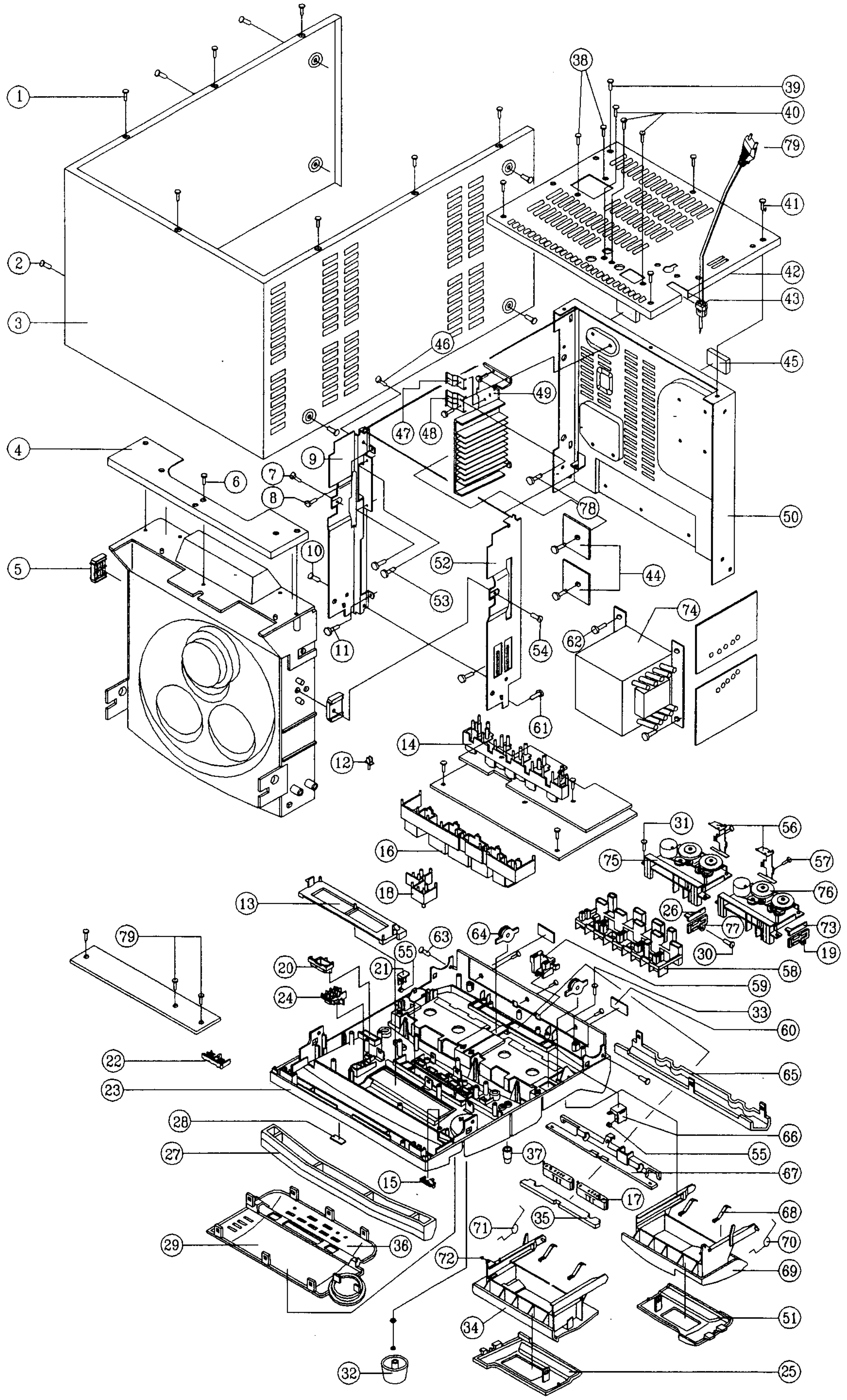
9. AC-410/413R/415K

REF. NO.	PARTS NO.	DESCRIPTION
1	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
2	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
3	402-385002-01	MAIN COVER BLACK
4	495-385017-01	REAR CABINET SUB
5	284-385001-01R	MECH SPACER BLACK HI-PS
6	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
7	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
8	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
9	428385001-01	CD BRACKET 'L'
10	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
11	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
12	292-385002-01S	DOLABY BUTTON (A)
13	229-385011-01R	FLD BRACKET HI-PS
14	291-385014-01S	FUNCTION BUTTON ABS
15	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
16	291-385005-01Z	CD FUNCTION BUTTON (B) ABS+PC
17	250-385001-01S	LAMP HOLDER WHITE ABS
18	292-385001-01S	REC BUTTON BLACK ABS
19	259-385004-01Z	INTERLOCK 'R' POM
20	291-385001-01S	POWER BUTTON BLACK ABS
21-a	229-385006-01Z	LATCH BRACKET BLACK POM
21-b	229-385001-01Z	LATCH BRACKET (L) POM
22	291-385002-01S	CD FUNCTION BUTTON (A)
23-a(AC-410)	200-385011-01R	FRONT CABINET HI-PS
23-b(AC-413R)	200-385011-03R	FRONT CABINET HI-PS
23-c(AC-415K)	200-385013-01R	FRONT CABINET HI-PS
24	275-385001-01S	TIMER BUTTON BLACK ABS
25	261-385001-01K	CASS DOOR LENS (L) SMOKE
26	259-385001-01S	INTERLOCK HOLDER 'L' ABS
27	219-385002-01R	CD DOOR HI-PS
28	286-385001-01S	NAME PLATE 'AKAI'
29	263-385001-01K	DISPLAY LENS AS
30	601-264506-60A	TAPPING SCREW FLAT HEAD 2.6X6MM
31	619-300312-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
32	273-385001-01S	VOLUME KNOB ABS
33	619-300306-00	TAPING SCREW P TYPE FLAT HEAD 3X6MM
34	211-385011-01S	CASS DOOR (L) HI-PS
35	263-385003-01L	DIR LENS CLEAR ACRYLIC
36	234-385011-01K	CONTORL SUB PANEL AS
37	273-385002-01S	MIC KNOB BLACK ABS
38	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
39	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
40	614-300208-00	SELF-TAPPING SCREW B/T 3X8MM BLACK
41	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
42-a(AC-410 E1,B1,E3)	495-385001-01	PANEL REAR
42-b(AC-410 S1)	495-385001-03	PANEL REAR
42-c(AC-413R RE1)	495-385001-05	PANEL REAR
42-d(AC-415K U5,Y6)	495-385002-01	PANEL REAR
42-e(AC-415K U8,Y7)	495-385002-03	PANEL REAR
43	650-381301-01	CORD BUSHING
44	619-300408-00	TAPING SCREW B/T WASHER 3X8MM BLACK
45	207-385101-01Z	REAR FOOT (PLASTIC) BLACK EVA
46	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
47	428-385003-01	HOLDER BRACKET SECC-E20 T=1
48	428-385001-01	HOLDER BRACKET (H)
49	481-385101-01	HEAT SINK (H)

50	493-385011-01	METAL BOTTOM CABINET
51	261-385002-01K	CASS DOOR LENS (R) SMOKE
52	428-385002-01	CD BRACKET 'R'
53	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
54	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
55	477-385011-01	LATCH PUSH SPRING
56	483-385001-01	DECK SHIELD COVER
57	604-264501-00A	TAPPING SCREW C TYPE BID 2.6X5MM
58	229-385014-01S	LED BRACKET WHITE ABS
59	229-385007-01S	HOLDER LID BRACKET BLACK ABS
60	330-385001-01	FRONT CUSHION FOOT
61	619-300208-00	TAPING SCREW P TYPE BID H 3X8MM BLACK
62	602-407008-60A	TAPPING SCREW P TYPE WASHER H 4X8MM
63	619-300212-00	TAPPING SCREW P TYPE BID H 3X12MM
64	703-385002-01	DAMPER DA-60W/W (105) ASSEMBLY
65	263-385002-01K	DECK DIR LENS AS
66-a	229-385006-01Z	LATCH BRACKET BLACKPOM
66-b	229-385002-01Z	LATCH BRACKET (R) POM
67	229-385003-01S	DECK DIR BLACK ABS
68	470-385001-01	CASS DOOR SPRING SHEET
69	211-385012-01S	CASS DOOR (R) HI-PS
70	471-385012-01	CASS DOOR SPRING WIRE (R)
71	471-385011-01	CASS DOOR SPRING WIRE (L)
72	259-385005-01S	STUD (BOSS LID) BLACK ABS
73	259-385002-01S	INTERLOCK HOLDER 'R' ABS
74-a(AC-410/413R)	001-733850-42A	POWER TRANSFORMER C1047-E
74-b(AC-415K)	001-733850-02	POWER TRANSFORNER C1047-U
75	741-490065-09	LOGICAL CONTROL DECK MECHA CMAL2Z065A
76	471-490066-09	LOGICAL CONTROL DECK MECHA CMAL2Z066A
77	259-385003-01Z	INTRLOCK 'L' POM
78	619-300306-00	TAPINET SCREW P TYPE FLAT HEAD 3X6MM
79-a(except,B1,Y6,S1)	071-669078-00A	AC LINE CORD VDE
79-b(B1,Y6)	071-449078-20	AC LINE CORD BS
79-c(S1)	071-559078-10	AC LINE CORD SAA

FINAL ASSEMBLY BLOCK

MODEL: AC-410/413R/415K



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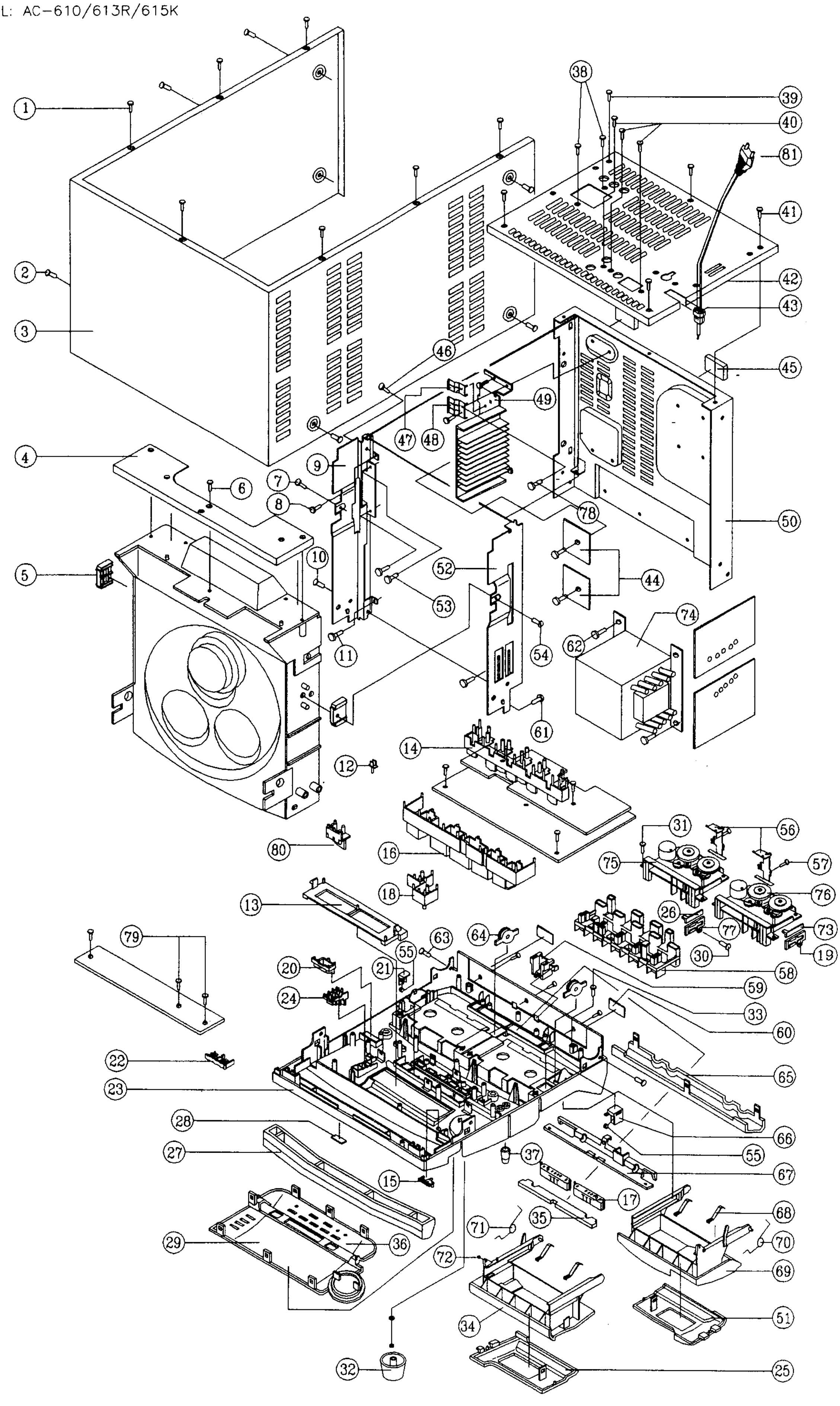
10. AC-610/613R/615K

REF. NO.	PARTS NO.	DESCRIPTION
1	606A301208-00	TAPPING SCREW P TYPE BID H 3X1.25PX8MM
2	606A301208-00	TAPPING SCREW P TYPE BID H 3X1.25PX8MM
3	402-385002-01	MAIN COVER (METAL)
4	495-385017-01	REAR CABINET SUB
5	248-385001-01R	MECH SPACER BLACK HI-PS
6	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
7	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
8	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
9	428-385001-01	CD BRACKET 'L'
10	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
11	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
12	292-385501-01S	DOLABY BUTTON (B)
13	229-385011-01R	FLD BRACKET HI-PS
14	291-385014-01S	FUNCTION BUTTON ABS
15	291-385003-01S	BALANCE BUTTON BLACK ABS
16	291-385005-01Z	CD FUNCTION BUTTON (B) ABS=PC
17	250-385001-01S	LAMP HOLDER WHITE ANS
18	292-385001-01S	REC BUTTON BLACK ABS
19	259-385001-01Z	INTERLOCK 'R' POM
20	291-385001-01S	POWER BUTTON BLACK ABS
21-a	229-385006-01Z	LATCH BRACKET BLACK POM
21-b	229-385001-01Z	LATCH BRACKET(L) POM
22	291-385002-01S	CD FUNCTION BUTTON (A)
23-a(AC-610)	200-385012-01R	FRONT CABINET HI-PS
23-b(AC-613R)	200-385001-02R	FRONT CABINET HI-PS
23-c(AC-615K)	200-385014-01R	FRONT CABINET HI-PS
24	275-385001-01S	TIMER BUTTON BLACK ABS
25	261-385001-01K	CASS DOOR LENS (L) SMOKE
26	259-385001-01S	INTERLOCK HOLDER 'L' ABS
27	219-385002-01S	CD DOOR HI-PS
28	286-385001-01S	NAME PLATE 'AKAI'
29	263-385001-02K	DISPLAY LENS AS
30	601-164506-60A	TAPPING SCREW FLAT HEAD 2.6X6MM
31	619-300312-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
32	273-385001-01S	VOLUME KNOB ABS
33	619-300306-00	TAPING SCREW P TYPE FLAT HEAD 3X6MM
34	211-385011-01S	CASS DOOR (L) HI-PS
35	263-385003-01L	DIR LENS CLEAR ACRYLIC
36	234-385011-01K	CONTORL SUB PANEL AS
37	273-385002-01S	MIC KNOB BLACK ABS
38	606A301208-00	TAPINET SCREW TYPE BID H 3X1.25PX8MM
39	606A301208-00	TAPINET SCREW P TYPE BID H 3X1.25PX8MM
40	614-300208-00	SELF-TAPPING SCREW B/T 3X8MM BLACK
41	606A301208-00	TAPINET SCREW P TYPE BID H 3X1.25PX3MM
42-a(AC-610 E1,B1,E3)	495-385005-01	PANEL REAR
42-b(AC-610 S1)	495-385005-02	PANEL REAR
42-c(AC-613R RE1)	495-385005-03	PANEL REAR
42-d(AC-610 U5,Y6)	495-385006-01	PANEL REAR
42-e(AC-610 U8,Y7)	495-385006-02	PANEL REAR
43	650-381301-01	CORD BUSHING
44	481-385002-01	HEAT SINK
45	330-385002-01	REAR CUSHION FOOT
46	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
47	428-385003-01	HOLDER BRACKET SECC-E20 T=1
48	428-385101-01	HOLDER BRACKET (H)
49	481-385101-01	HEAT SINK (H)

50	493-385011-01	METAL BOTTOM CAB
51	261-385002-01K	CASS DOOR LENS (R) SMOKE
52	428-385002-01	CD BRACKET 'R'
53	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
54	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
55	477-385011-01	LATCH PUSH SPRING
56	483-385001-01	DECK SHIELD COVER
57	604-264501-00A	TAPPING SCREW C TYPE BID H 2.6X5MM
58	229-385014-01S	LED BRACKET WHITE ABS
59	229-385007-01S	HOLDER LID BRACKET BLACK ABS
60	330-385001-01	FRONT CUSHION FOOT
61	619-300208-00	TAPPING SCREW P TYPE BID H 3X8MM BLACK
62	602-407008-60A	TAPPING SCREW P TYPE WASHER H 4X8MM
63	619-300212-00	TAPING SCREW P TYPE BID H 3X12MM BLACK
64	703-385002-01	DAMPER DA-60W/W (105) ASSEMBLY
65	263-385002-01K	DECK DIR LENS AS
66-a	229-385006-01Z	LATCH BRACKET BLACK POM
66-b	229-385002-01Z	LATCH BRACKT(R) POM
67	229-385003-01S	DECK DIR BKT BLACK ABS
68	470-385001-01	CASS DOOR SPRING SHEET
69	211-385012-01S	CASS DOOR (R) HI-PS
70	471-385012-01	CASS DOOR SPRING WIRE (R)
71	471-385011-01	CASS DOOR SPRING WIRE (L)
72	259-385005-01S	STUD (BOSS LID) BLACK ABS
73	259-385002-01S	INTERLOCK HOLDER 'R' ABS
74-a(AC-610/613R)	001-873855-42	POWER TRANSF ORMER C1050-E
74-b(AC-615K)	001-873855-02	POWER TRANSFORMER C1050-U
75	471-490065-09	LOGICAL CONTROL DECK MECHA CMAL2Z065A
76	471-490066-09	LOGICAL CONTROL DECK MECHA CMAL2Z066A
77	259-385003-01Z	INTERLOCK 'L' POM
78	606A301208-00	TAPING SCREW P TYPE BID H 3X1.25PX8MM
79	619-300306-00	TAPPING SCREW P TYPE FLAT HEAD 3X6MM
80	292-385502-01S	TEST BUTTON
81-a(except,B1,Y6,S1)	071-669078-00A	AC LINE CORD VDE
81-b(B1,Y6)	071-449078-20	AC LINE CORD BS
81-c(S1)	001-873855-02	AC LINE CORD SAA

FINAL ASSEMBLY BLOCK

MODEL: AC-610/613R/615K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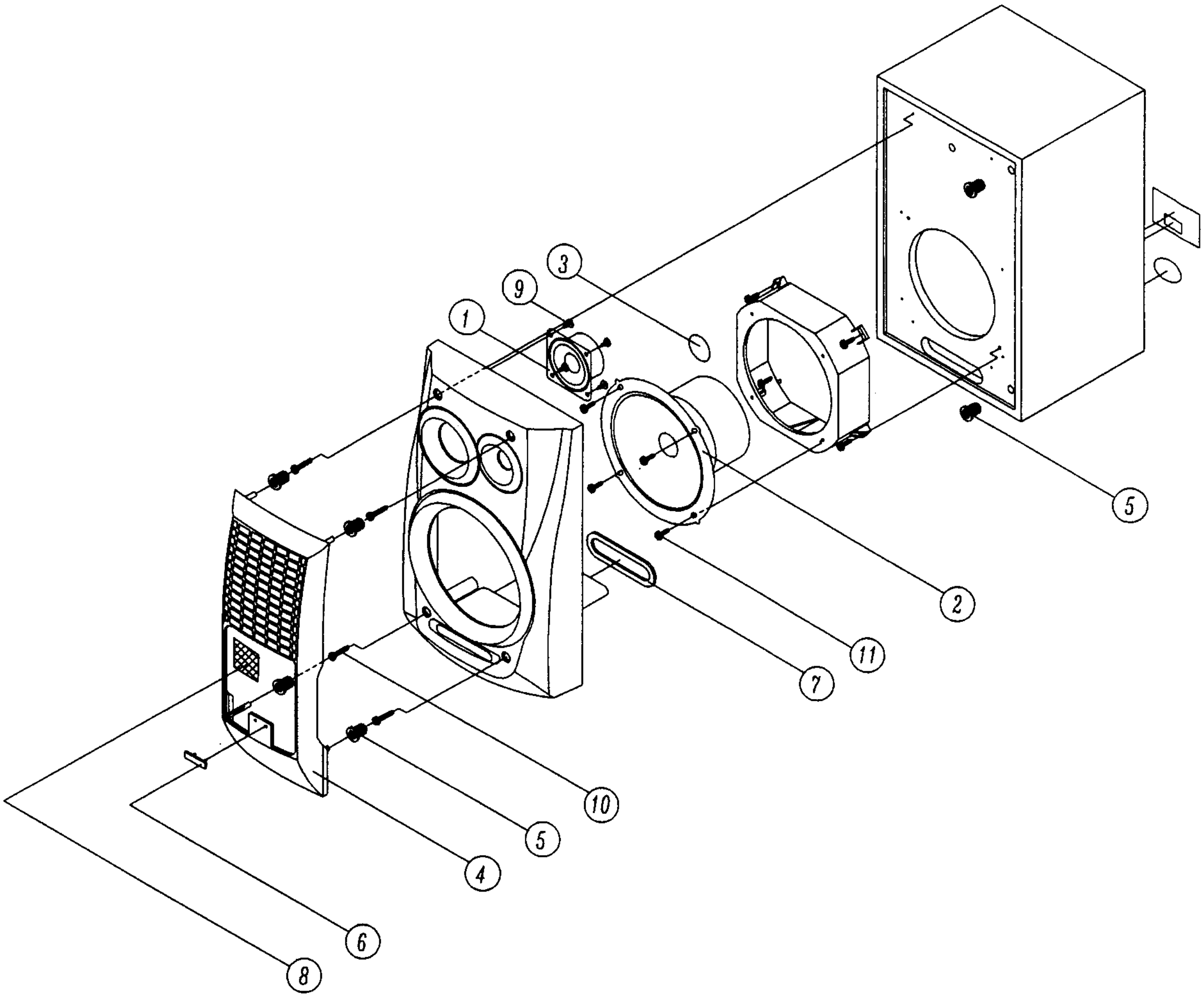
11. SPEAKER SYSTEM (SR-410)



REF. NO	PART NO	DESCRIPTION
1	066-283220-WT	2" 8Ω 30-40W
2	066-953254-WT	5^1/4 6Ω 30-40W
3	070-100027-02Z	27MM PIEZO
4	239-050201-01R	ADAPTOR
5	259-050201-01Z	CUSHION FOR SPEAKER BOX BLK S.B.R
6	286-385002-01S	NAME PLAATE FOR AKAI
7	323-050104-01	SPONG SPACER
8	583-050201-01	SPEAKER CLOTH 317MM X200MM BLK
9	610-350208-10	SELF-TAPPING SCREW R/T 3.5X8 BLACK
10	610-400220-30	SELF-TAPPING SCREW R/T 4.0X20 BLACK
11	614-400216-30	SELF-TAPPING SCREW R/T 4.0X16 BLACK

XII. ABBREVIATIONS

TUNER

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AFC	Auto Frequency Control	MEMO	MEMOry
AGC	Auto Gain Control	MI-COM	MIcro-COMputer
ALC	Auto Level Control	MIN	MINimum
AM	Amplitude Modulation	MIX	MIXing
AMP	AMPlifier	MPX	MultiPleX
ANT	ANTenna	MW	Medium Wave(frequency)
BATT	BATTery	NC	No Connection
BLK	BLocK	NFB	Negative Feed Back
BUFF	BuFFer	OSC	OSCillator
COMP	COMParator	PCB	Printed Circuit Board
DET	DETect(DETector)	PLL	Phase Locked Loop
FLD	FLuorescent Display	Q.D	Quadrature Detector
FM	Frequency Modulation	Rch	Right channel
FREQ	FREQuency	REF	REFerence
GND	GrouND	REG	REGulator
H	High	RF	Radio Frequency
HPF	High Pass Filter	SEG	SEGment
IF	Intermediate Frequency	SELE	SELEctor
IHF	Institut of High Fidelity	SENS	SENSitivity
IND	INDicator	SIG	SIGnal
I/O	In/Out	S/N	Signal to Noise Ratio
JW	Jumper Wire	SSG	Standard Signal Generator
L	Low	STD	STanDard
LCD	Liquid Crystal Display	SW	Switch: Short Wave(frequency)
LCH	Left CHannel	THD	Total Harmonic Distortion
LED	Light Emitting Diode	TP	Test Point
LPF	Low Pass Filter	VCO	Voltage Controlled Oscillator
LW	Long Wave (Frequency)	VR	Variable Resistor
XTAL	Crystal		

COMPACT DISC

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A-D	Analog to Digital(Converter)	Mb	Mega Bits
ADC	Analog Code Decimal (Converter)	MDA	Mortor Drive Amplifier
BCD	Binaary Code Decimal	MFM	Modified Frequency Modulation
BPI	Bits Per Inch	MW	Mono-stable Multivibrator
CD	Compact Disc	M2FM	Modified Midified Frequency Modulation
CIRC	Cross Interleaving & Reed	MOD2	Modulo 2 (Addition)
	Solomon Coding	MP	Microprocessor
CLV	Constant Linear Velocity	MSB	Most Significant Bit
CP	Clock Pulses	NA	Numerical Aperture
CRCC	Cyclic Redundancy Check Codes	NRZ	Non Return to Zero
D Level	Decision Level	NRZ-I	Non Return to Zero Inverted
D-A	Digital to Analog(Converter)	P	Parity Data
DAC	Digital to Analog(Converter)	PAM	Pulse Amplitude Modulation
DAD	Digital Audio Disc	PCM	Pulse Code Modulation
DEM	Dynamic Element Matching	PD	Phase Detector
DPD	Differential Phase Detection	PE	Phase Encode
DSV	Digital sum Value	PLL	Phase locked Loop
EFM	Eight to Fourteen Modulation	PNM	Pulse Number Modulation
EX-OR	Exclusive OR	PPM	Pulse Phase Modulation
FCI	Flux Changes per Inch	PWM	Pulse Width Midulation
FIR	Finite Impulse Response	Q	Parity Data
FP	Front Pluse	R,R1,R2,ect.	Data for Right Channel
FPG	Front Pluse Gate	RAM	Random Access Memory
F	Frequency of Sampling	RPG	Rear Pulse Gate
GF	Galois Field	SCOOP	Self Coupled Optical Pick-up
H&V(Parity)	Horizonal & Veertical	S&H	Sample & Hold
IIR	Infinite Impulse Response	S/N	Signal to Noise Ratio
KB	Kilo Bits	SSG	Standard Signal Generator
L,L1,L2,ect.	Data for Left Channel	SYSCON	SYStem CONtrol
LPF	Low Pass Filter		
LSB	Least Significant Bit		

CASSETTE

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	MIN	MINite
A/D	Analog/Digital	MML	Maximum Modulation Level
AF	Auto Fader	MOL	Maximum Output Level
AMP	AMPlifier	MPX	MultiPlex
AR	Anti Recording	NC	Not connected (No Connection)
AT BIAS	Auto Turning BIAS	NFB	Negative Feed Back
ATT	ATTenuator	NORM	NORMal
BAL	BALance	NR	Noisse Reduction
BEFB	and Elimination Filter	OSC	OSCillator (OSCillation)
BSS	Blank Search System	P	Pulse
CAPM	CAPstan Motor	PB	Play Back
CH	CHannel	QMSS	Quick Memory Search Syatem
COMP	CoMParator	OR	Quick Reverse
CONT	CONTinuance	RCH	Right CHannel
CRLP	Computer Recording Level	REC	RECord (RECording)
	Processing	REV	REVerse
CS	Chip Select	ROT	ROTation
D/A	Digital/Analog	REW	REWind
DC	Direct Current	SEC	SECond
DET	DETector	SELE	SELEctor
DISCRU	DISCRIminator	SENS	SENSitivity
DUB	DUBbing	SEPP	Single Ended Push Pull
EQ	EQualizer	SIG	SIGnal
FF or (F.FWD)	Fast Foward	SPECT	SPECTrum
FLD	FLuoresent Display	STD	STanDard
FREQ	FREQuency	SW	SWitch
FWD	ForWarD	SYS	CONSYStem CONtrol
GND	GrouND	TP	TEST Point
H	High	TRIG	TRIGa
HPF	High Pass Filter	VCA	Voltage Control Attenuator
IND	INDicator	VOL	Volume
IPLS	Instant Program Location System	VOLT	VOLTage
L	Low	VR	Variable Resistor
LCH	Left Channel	XTAL	crysTAL
LEDLight	Emitting Diode	X1	Normal speed
MEMO	MEMOry	X2	Dubble speed
MICOM	MIcroCOMputer		

AMPLIFIEER

ABBREVIATION	EXPLANATION
A	Analog
AC	Alternating Current
AMP	AMPlifier
CD	Compact Disc
COM	COMmon
D	Digital
D/A	Digital to Analog
DAC	Digital to Analog Converter
DAT	Digital Audio Tape recorder
DC	Direct Current
GND	GrouNd
L	Left
LED	Light Emitting Diode
MC	Moving Coil
MM	Moving Magnet
PCB	Printed Circuit Board
R	Right
REG	REGulator
REC	RECord
TR	TRansistor
SW	SWitch
V.AMP	Voltage AMPlifier
V.DISC	Video DISC
VR	Variable Resistance
VTR	Video Tape Recorder

AKAI

MODEL AC-410, 413R, 415K
MODEL AC-610, 613R, 615K

SCHEMATIC DIAGRAMS AND PC BOARDS

TABLE OF CONTENTS

I. BLOCK DIAGRAMS

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1. CONNECTION DIAGRAM 6
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3. MAIN (600 SERIES) (AC-610, 613R, 615K) 8
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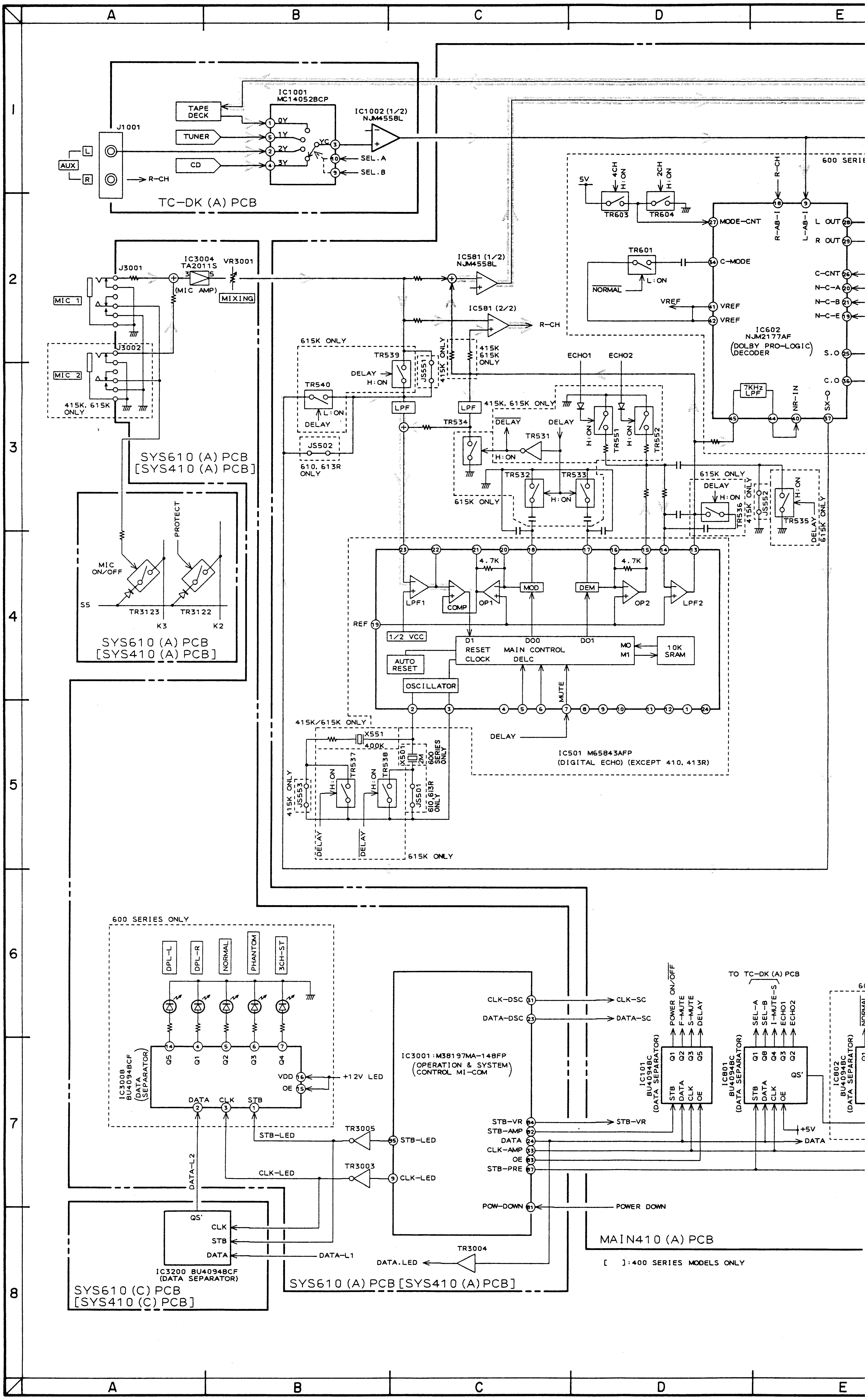
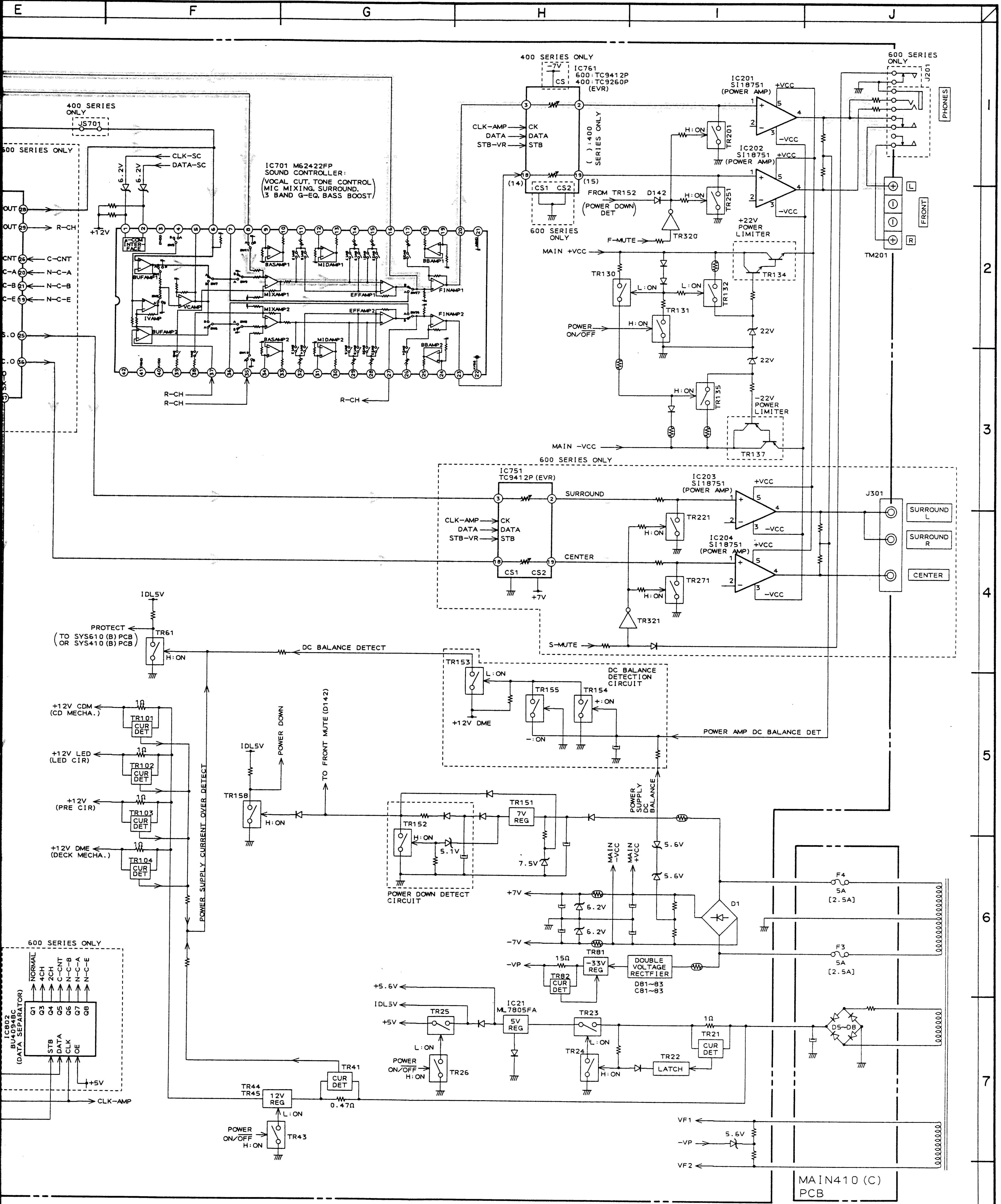
5. SYSCON (400 SERIES) (AC-410, 413R, 415K) 12
6. SYSCON (600 SERIES) (AC-610, 613R, 615K) 14

III. INFORMATION OF ICs 16

Use these schematic diagrams and PC boards together with the provided service manual.

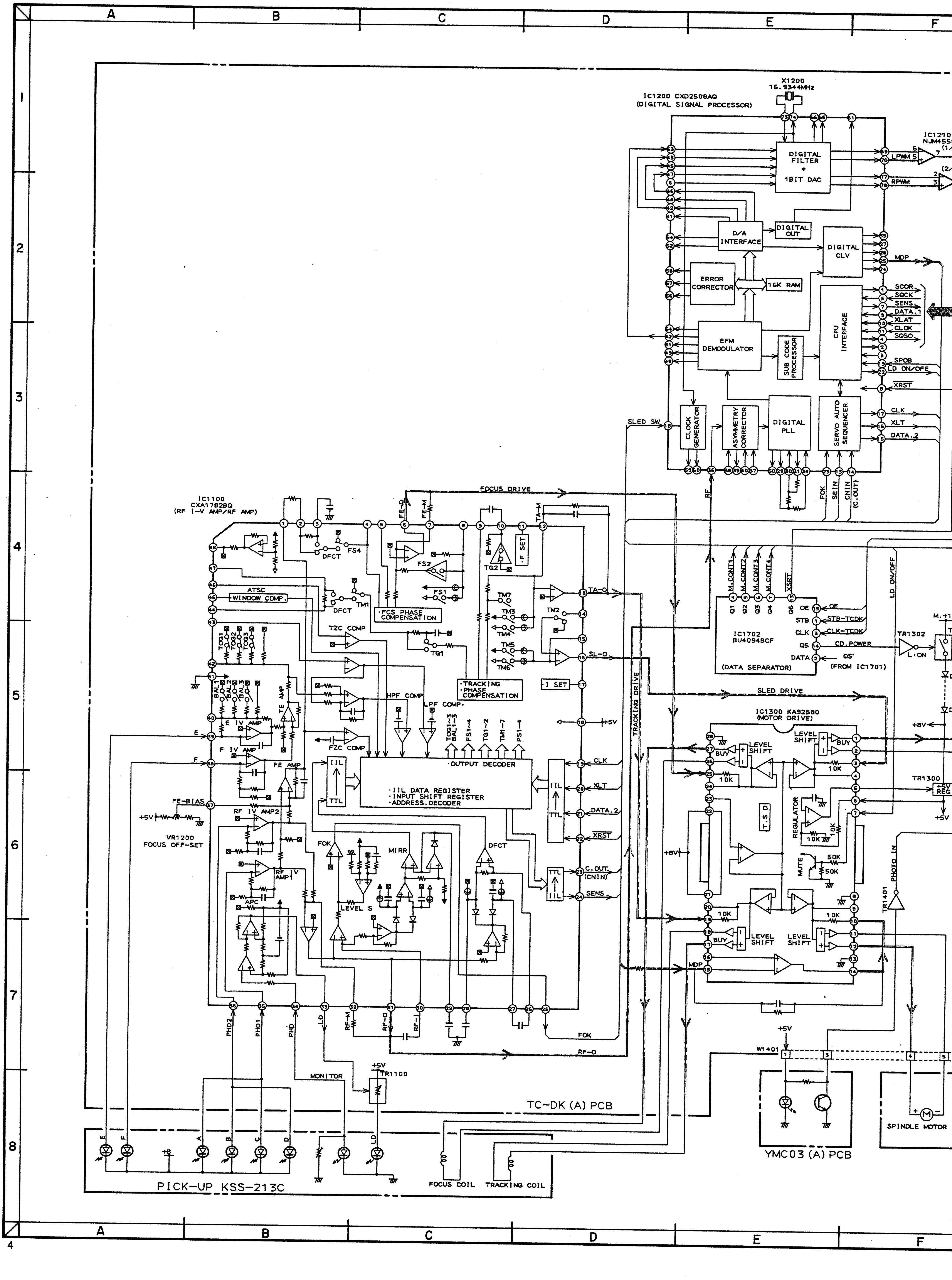

A
B
C
D
E
1
2
3
4
5
6
7
8
IC1001
MC14052BCP
TAPE DECK
TUNER
CD
0Y
1Y
2Y
3Y
YC
SEL.A
SEL.B
IC1002 (1/2)
NJM4558L
J1001
AUX
L
R
R-CH
TC-DK (A) PCB
J3001
IC3004
TA2011S
(MIC AMP)
VR3001
MIXING
MIC 1
J3002
MIC 2
415K, 615K ONLY
SYS610 (A) PCB
[SYS410 (A) PCB]
IC581 (1/2)
NJM4558L
IC581 (2/2)
R-CH
615K ONLY
TR539
DELAY H:ON
JS551
415K ONLY
415K 615K ONLY
TR540
L:ON
DELAY
JS502
610, 613R ONLY
LPF
415K, 615K ONLY
ECHO1
ECHO2
TR534
DELAY
TR531
H:ON
TR551
TR552
TR532
TR533
615K ONLY
600 SERIES
5V
4CH H:ON
2CH H:ON
TR603
TR604
R-CH
R-AB-I
L-AB-I
MODE-CNT
L OUT
R OUT
TR601
L:ON
NORMAL
C-MODE
VREF
VREF
VREF
C-CNT
N-C-A
N-C-B
N-C-E
IC602
NJM2177AF
(DOLBY PRO-LOGIC DECODER)
S.O
C.O
7KHz LPF
NR-IN
SX-O
DELAY H:ON
TR536
415K ONLY
JS552
TR535
DELAY 615K ONLY
MIC ON/OFF
PROTECT
S5
TR3123
TR3122
K3
K2
SYS610 (A) PCB
[SYS410 (A) PCB]
4.7K
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
1/2 VCC
D1
RESET
CLOCK
MAIN CONTROL
DO0
DO1
DELC
MO
M1
10K SRAM
AUTO RESET
OSCILLATOR
MUTE
DELAY
IC501 M65843AFP
(DIGITAL ECHO) (EXCEPT 410, 413R)
415K/615K ONLY
X551
400K
X501
2M
600 SERIES ONLY
TR537
TR538
H:ON
415K ONLY
JS553
JS501
610 613R ONLY
DELAY
DELAY
615K ONLY
600 SERIES ONLY
DPL-L
DPL-R
NORMAL
PHANTOM
3CH-ST
Q5
Q1
Q2
Q3
Q4
VDD
OE
+12V LED
IC3008
BU4094BCF
(DATA SEPARATOR)
DATA
CLK
STB
DATA-L2
TR3005
STB-LED
TR3003
CLK-LED
IC3001:M38197MA-148FP
(OPERATION & SYSTEM CONTROL MI-COM)
CLK-DSC
DATA-DSC
CLK-SC
DATA-SC
STB-VR
STB-AMP
DATA
CLK-AMP
OE
STB-PRE
STB-LED
CLK-LED
STB-VR
POW-DOWN
POWER DOWN
QS'
CLK
STB
DATA
DATA-L1
IC3200 BU4094BCF
(DATA SEPARATOR)
TR3004
DATA.LED
SYS610 (C) PCB
[SYS410 (C) PCB]
SYS610 (A) PCB [SYS410 (A) PCB]
POWER ON/OFF
F-MUTE
S-MUTE
DELAY
IC101
BU4094BC
(DATA SEPARATOR)
TO TC-DK (A) PCB
SEL-A
SEL-B
I-MUTE-S
ECHO1
ECHO2
IC801
BU4094BC
(DATA SEPARATOR)
QS'
+5V
DATA
IC802
BU4094BC
(DATA SEPARATOR)
NORMAL
MAIN410 (A) PCB
[ ]:400 SERIES MODELS ONLY



E
F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS701
600 SERIES ONLY
CLK-SC
DATA-SC
6.2V
+12V
IC701 M62422FP
SOUND CONTROLLER:
(VOCAL CUT, TONE CONTROL, MIC MIXING, SURROUND, 3 BAND G-EQ, BASS BOOST)
μ-COM INTER FACE
BUFAMP1
BUFAMP2
IVAMP
VCAMP
BASAMP1
BASAMP2
MIDAMP1
MIDAMP2
BBAMP1
BBAMP2
MIXAMP1
MIXAMP2
EFFAMP1
EFFAMP2
FINAMP1
FINAMP2
R-CH
N-C-A
N-C-B
N-C-E
C-CNT
400 SERIES ONLY
-7V
CS
IC761
600: TC9412P
400: TC9260P
(EVR)
CLK-AMP
DATA
STB-VR
CK
STB
( ): 400 SERIES ONLY
CS1
CS2
600 SERIES ONLY
IC201
SI18751
(POWER AMP)
+VCC
-VCC
H:ON
TR201
IC202
SI18751
(POWER AMP)
FROM TR152
(POWER DOWN) DET
D142
TR251
F-MUTE
TR320
600 SERIES ONLY
J201
PHONES
FRONT
L
R
TM201
MAIN +VCC
+22V
POWER LIMITER
TR134
TR130
L:ON
TR131
TR132
POWER ON/OFF
22V
H:ON
TR135
-22V
POWER LIMITER
MAIN -VCC
TR137
600 SERIES ONLY
IC751
TC9412P (EVR)
SURROUND
CENTER
+7V
IC203
SI18751
(POWER AMP)
TR221
IC204
SI18751
(POWER AMP)
TR271
TR321
S-MUTE
J301
SURROUND L
SURROUND R
CENTER
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
H:ON
DC BALANCE DETECT
TR153
L:ON
DC BALANCE DETECTION CIRCUIT
TR155
TR154
+:ON
-:ON
+12V DME
POWER AMP DC BALANCE DET
+12V CDM (CD MECHA.)
TR101
CUR DET
+12V LED (LED CIR)
TR102
+12V (PRE CIR)
TR103
+12V DME (DECK MECHA.)
TR104
1Ω
POWER DOWN
TO FRONT MUTE (D142)
POWER SUPPLY CURRENT OVER DETECT
TR158
TR151
7V REG
TR152
5.1V
7.5V
POWER DOWN DETECT CIRCUIT
POWER SUPPLY DC BALANCE
MAIN -VCC
MAIN +VCC
5.6V
+7V
6.2V
-7V
D1
F4
5A
[2.5A]
F3
5A
[2.5A]
-VP
15Ω
TR81
-33V REG
TR82
DOUBLE VOLTAGE RECTFIER
D81~83
C81~83
+5.6V
IDL5V
+5V
TR25
IC21
ML7805FA
5V REG
TR23
TR21
D5~D8
L:ON
POWER ON/OFF
H:ON
TR26
TR24
TR22
LATCH
600 SERIES ONLY
IC802
BU4094BC
(DATA SEPARATOR)
NORMAL
4CH
2CH
C-CNT
N-C-B
N-C-A
N-C-E
Q1
Q3
Q4
Q5
Q6
Q7
Q8
STB
DATA
CLK
OE
+5V
CLK-AMP
TR41
TR44
TR45
12V REG
0.47Ω
TR43
VF1
VF2
MAIN410 (C) PCB

NORMAL SIGNAL LINE (L-CH)
EFFECT SIGNAL LINE (DELAY & D.P.L)
MIC SIGNAL LINE
CENTER & SURROUND SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
MAIN
BLOCK DIAGRAM
No.3-1 C104751M
A1


IC1200 CXD2508AQ
(DIGITAL SIGNAL PROCESSOR)
X1200
16.9344MHz
DIGITAL FILTER + 1BIT DAC
D/A INTERFACE
DIGITAL OUT
DIGITAL CLV
ERROR CORRECTOR
16K RAM
EFM DEMODULATOR
SUB CODE PROCESSOR
CPU INTERFACE
CLOCK GENERATOR
ASYMMETRY CORRECTOR
DIGITAL PLL
SERVO AUTO SEQUENCER
IC1210
NJM455
LPWM
RPWM
MDP
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
CLK
XLT
DATA.2
SLED SW
RF
FOK
SEIN
CNIN
(C.OUT)
IC1100
CXA1782BQ
(RF I-V AMP/RF AMP)
FOCUS DRIVE
FE-O
FE-M
TA-M
FS4
DFCT
FS2
FS1
TG2
F SET
ATSC
WINDOW COMP.
TM1
FCS PHASE COMPENSATION
TZC COMP
TG1
TA-O
TM7
TM3
TM4
TM2
TM5
TM6
SL-O
TRACKING PHASE COMPENSATION
I SET
TOG1
TOG2
TOG3
BAL1
BAL2
BAL3
TE AMP
E IV AMP
F IV AMP
FE AMP
HPF COMP
LPF COMP.
FZC COMP
TOG1~3 BAL1~3
FS1~4
TG1~2
TM1~7
PS1~4
OUTPUT DECODER
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
IIL
TTL
+5V
C.OUT
(CNIN)
SENS
FE-BIAS
VR1200
FOCUS OFF-SET
RF IV AMP2
RF IV AMP1
APC
FOK
MIRR
LEVEL S
DFCT
PHD2
PHD1
PHD
LD
RF-M
RF-O
RF-I
FOK
RF-O
MONITOR
TR1100
TRACKING DRIVE
TC-DK (A) PCB
PICK-UP KSS-213C
FOCUS COIL
TRACKING COIL
M.CONT1
M.CONT2
M.CONT3
M.CONT4
XSRT
OE
STB
STB-TCDK
CLK-TCDK
Q5
CD.POWER
DATA
QS'
(FROM IC1701)
IC1702
BU4094BCF
(DATA SEPARATOR)
TR1302
L:ON
SLED DRIVE
IC1300 KA9258D
(MOTOR DRIVE)
LEVEL SHIFT
BUY
10K
T.S.D
REGULATOR
MUTE
50K
+8V
TR1300
+5V REG
PHOTO IN
TR1401
+5V
W1401
YMC03 (A) PCB
SPINDLE MOTOR
A
B
C
D
E
F
1
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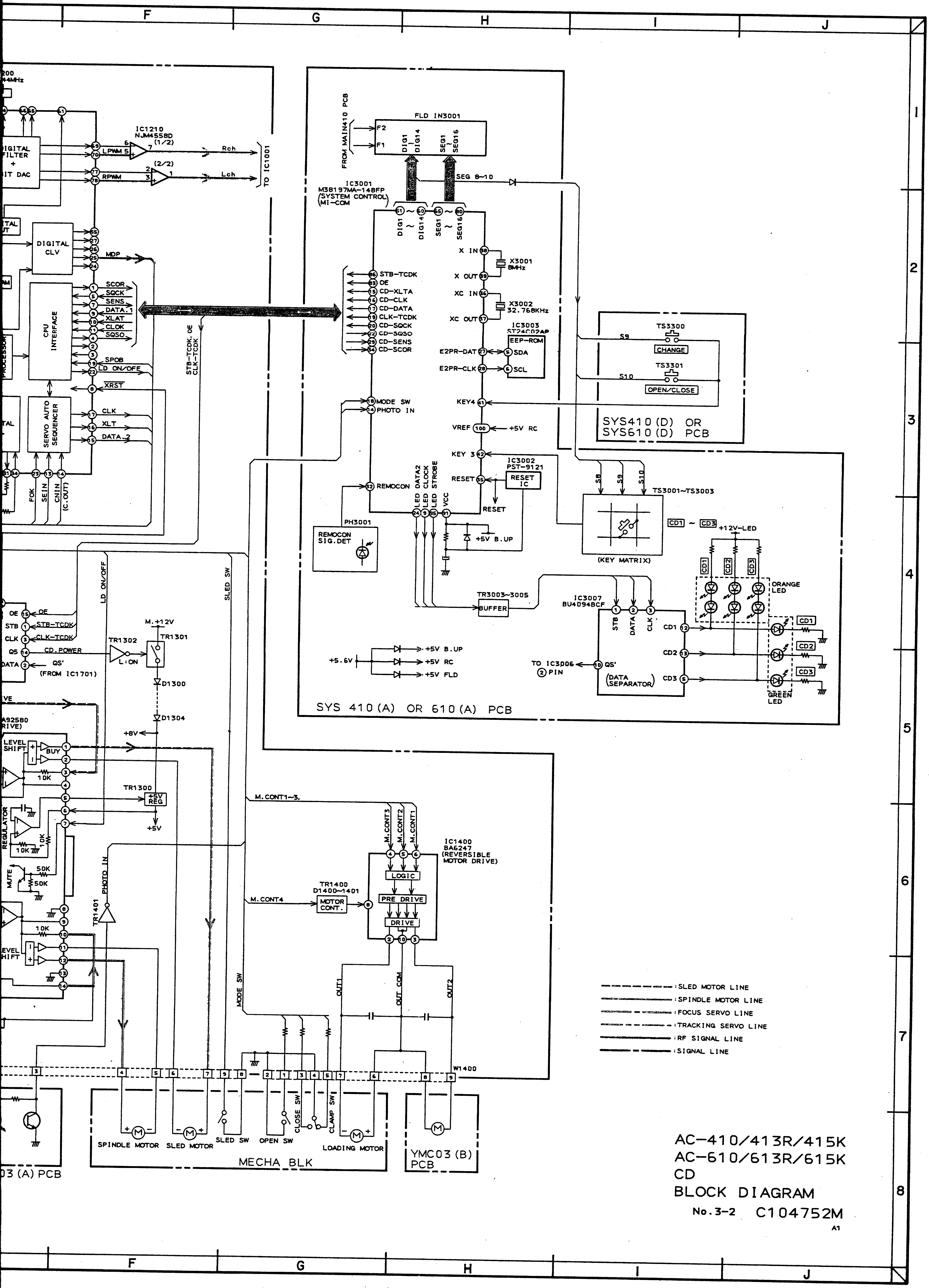
F
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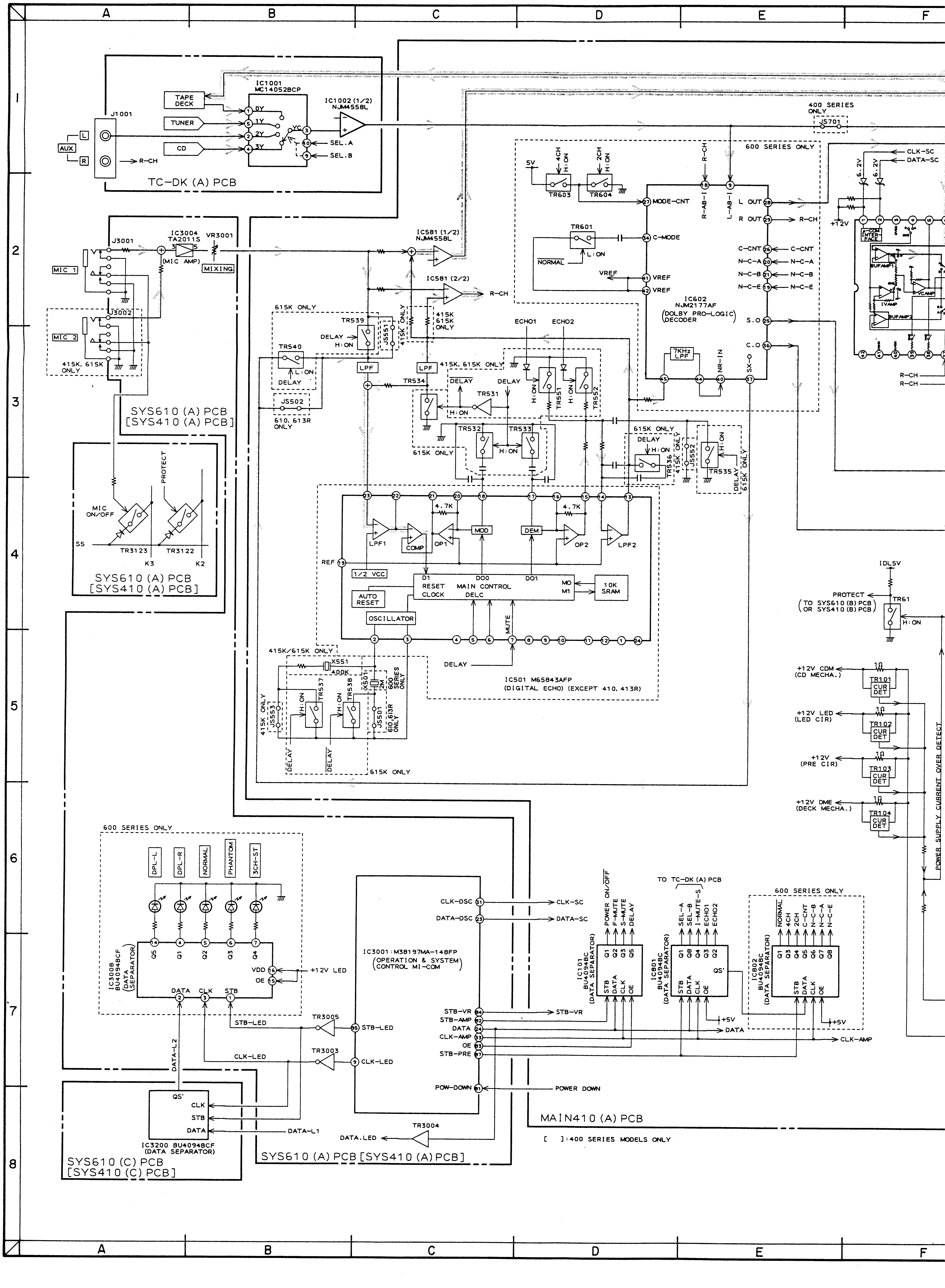
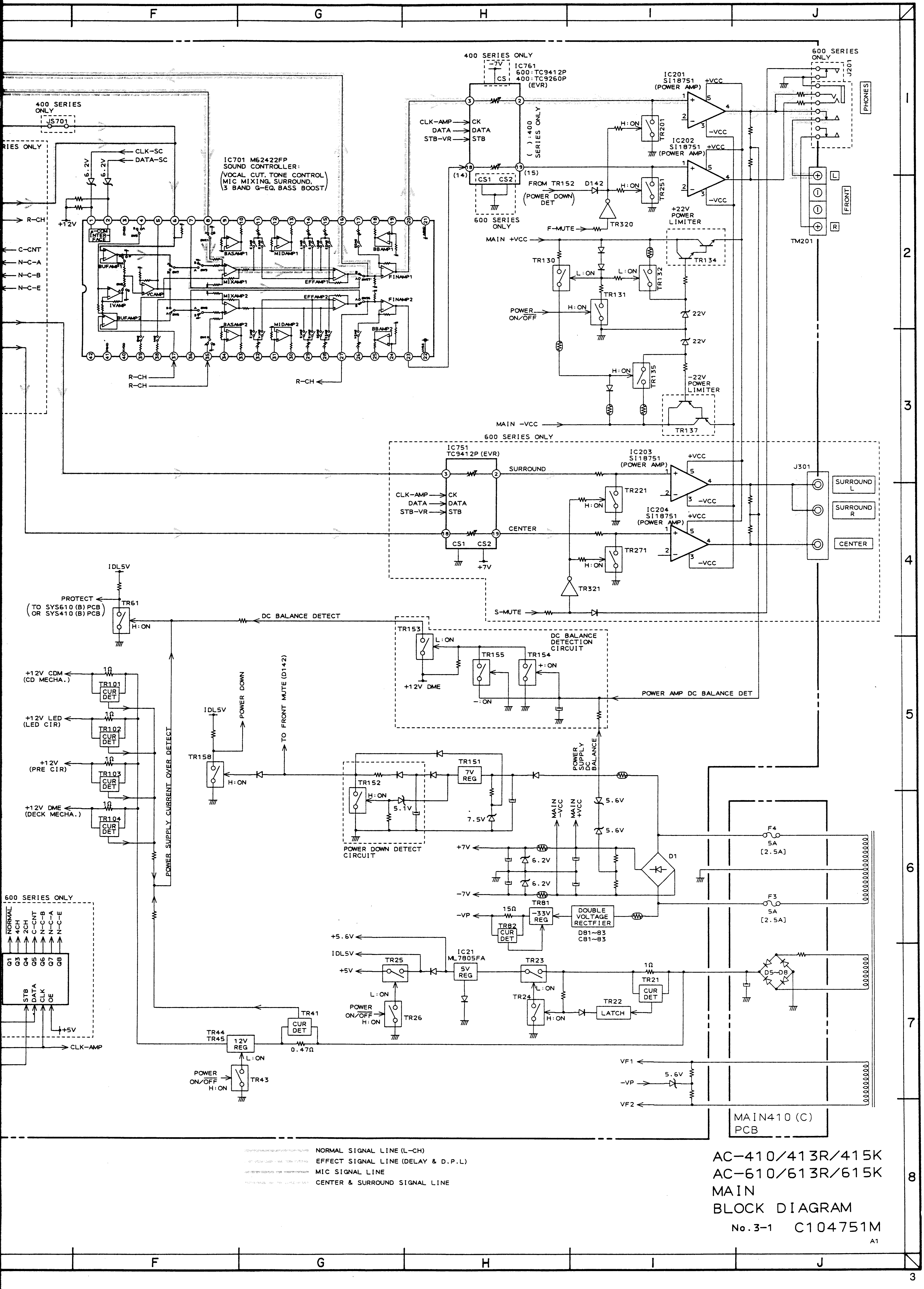
IC1210
NJM4558D
(1/2)
(2/2)
DIGITAL FILTER + BIT DAC
LPWM
RPWM
Rch
Lch
TO IC1001
DIGITAL CLV
MDP
CPU INTERFACE
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
SERVO AUTO SEQUENCER
CLK
XLT
DATA.2
FOK
SEIN
CNIN (C.OUT)
STB-TCDK, OE
CLK-TCDK
FROM MAIN410 PCB
FLD IN3001
F2
F1
DIG1 ~ DIG14
SEG1 ~ SEG16
SEG 8~10
IC3001
M38197MA-148FP
(SYSTEM CONTROL)
(MI-COM)
STB-TCDK
OE
CD-XLTA
CD-CLK
CD-DATA
CLK-TCDK
CD-SQCK
CD-SQSO
CD-SENS
CD-SCOR
X IN
X OUT
XC IN
XC OUT
X3001 8MHz
X3002 32.768KHz
IC3003 ST24C02AP
EEP-ROM
E2PR-DAT
E2PR-CLK
SDA
SCL
MODE SW
PHOTO IN
KEY4
VREF
+5V RC
KEY 3
RESET
IC3002 PST-9121
RESET IC
REMOCON
LED DATA2
LED CLOCK
LED STROBE
VCC
PH3001
REMOCON SIG.DET
+5V B.UP
TR3003~3005
BUFFER
IC3007
BU4094BCF
STB
DATA
CLK
CD1
CD2
CD3
QS'
(DATA SEPARATOR)
TO IC3006 ② PIN
+5.6V
+5V B.UP
+5V RC
+5V FLD
SYS 410 (A) OR 610 (A) PCB
TS3300
S9
CHANGE
TS3301
S10
OPEN/CLOSE
SYS410 (D) OR
SYS610 (D) PCB
S8
S9
S10
TS3001~TS3003
(KEY MATRIX)
+12V-LED
ORANGE LED
GREEN LED
LD ON/OFF
SLED SW
OE
STB
CLK
QS
DATA
STB-TCDK
CLK-TCDK
CD.POWER
QS'
(FROM IC1701)
TR1302
L:ON
M.+12V
TR1301
D1300
D1304
+8V
A92580 (DRIVE)
LEVEL SHIFT
BUY
10K
TR1300
+5V REG
+5V
REGULATOR
MUTE
50K
LEVEL SHIFT
PHOTO IN
TR1401
M.CONT1~3
M.CONT3
M.CONT2
M.CONT1
IC1400
BA6247
(REVERSIBLE MOTOR DRIVE)
LOGIC
PRE DRIVE
DRIVE
M.CONT4
TR1400
D1400~1401
MOTOR CONT.
MODE SW
OUT1
OUT COM
OUT2
W1400
SPINDLE MOTOR
SLED MOTOR
SLED SW
OPEN SW
CLOSE SW
CLAMP SW
LOADING MOTOR
MECHA BLK
YMC03 (B) PCB
03 (A) PCB
:SLED MOTOR LINE
:SPINDLE MOTOR LINE
:FOCUS SERVO LINE
:TRACKING SERVO LINE
:RF SIGNAL LINE
:SIGNAL LINE

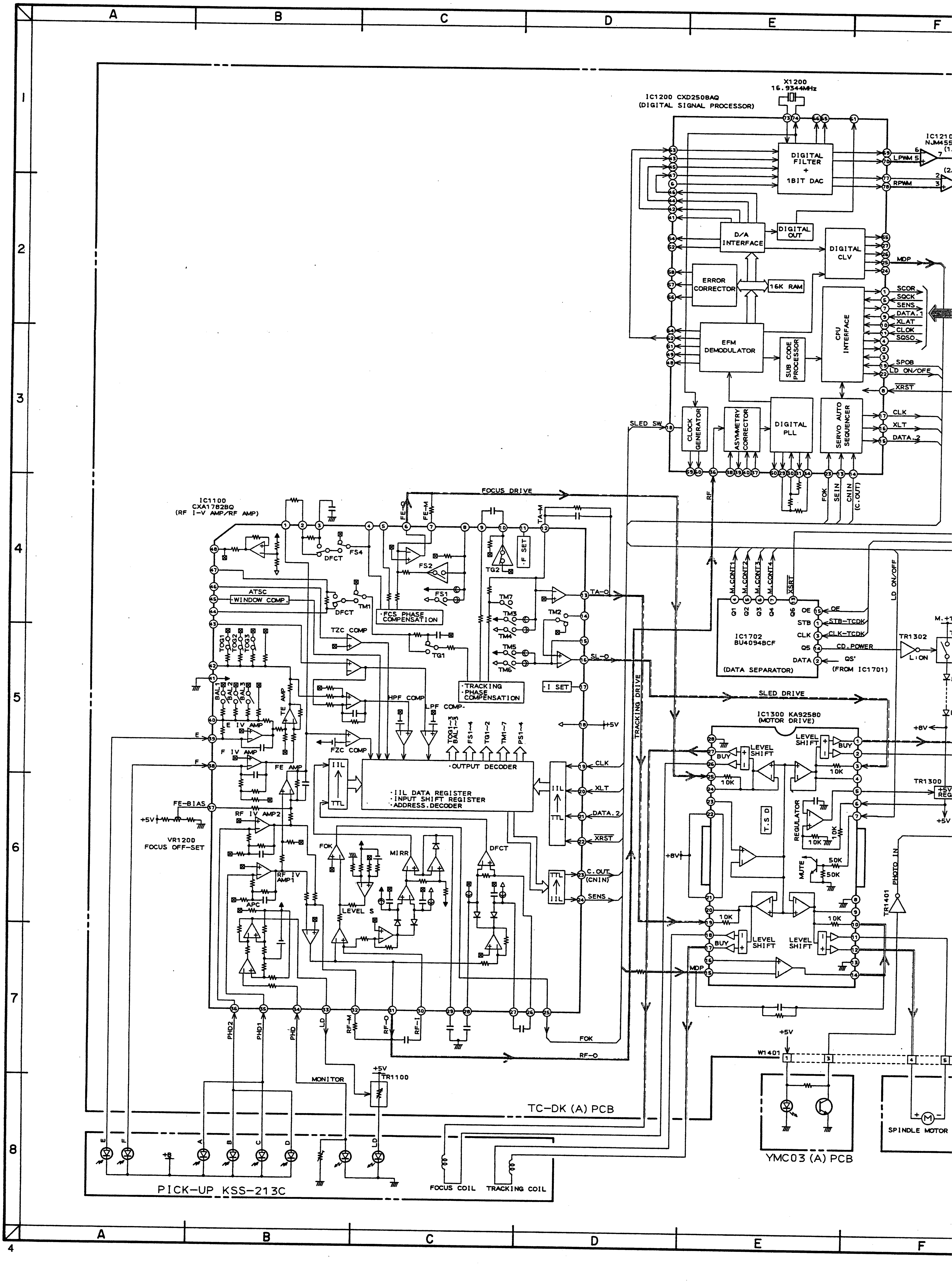
AC-410/413R/415K
AC-610/613R/615K
CD
BLOCK DIAGRAM
No.3-2 C104752M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
IC1001
MC14052BCP
IC1002 (1/2)
NJM4558L
TAPE DECK
TUNER
CD
J1001
AUX
L
R
R-CH
0Y
1Y
2Y
3Y
YC
SEL.A
SEL.B
TC-DK (A) PCB
400 SERIES ONLY
JS701
600 SERIES ONLY
5V
4CH H:ON
2CH H:ON
TR603
TR604
R-CH
R-AB-I
L-AB-I
L OUT
R OUT
MODE-CNT
TR601
C-MODE
NORMAL
L:ON
VREF
C-CNT
N-C-A
N-C-B
N-C-E
IC602
NJM2177AF
(DOLBY PRO-LOGIC DECODER)
S.O
C.O
7KHz LPF
NR-IN
SX-O
CLK-SC
DATA-SC
6.2V
+12V
A-COM INTER FACE
BUFAMP1
BUFAMP2
IVAMP
VCAMP
J3001
IC3004
TA2011S
(MIC AMP)
VR3001
MIXING
MIC 1
MIC 2
J3002
415K, 615K ONLY
IC581 (1/2)
NJM4558L
IC581 (2/2)
615K ONLY
TR539
DELAY H:ON
JS551
415K ONLY
415K 615K ONLY
TR540
L:ON
DELAY
LPF
ECHO1
ECHO2
TR534
415K, 615K ONLY
TR531
TR551
TR552
H:ON
JS502
610, 613R ONLY
SYS610 (A) PCB
[SYS410 (A) PCB]
TR532
TR533
615K ONLY
TR536
JS552
TR535
DELAY 615K ONLY
PROTECT
MIC ON/OFF
S5
TR3123
TR3122
K3
K2
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
1/2 VCC
D1
RESET
CLOCK
MAIN CONTROL
DELC
DO0
DO1
MO
M1
10K SRAM
AUTO RESET
OSCILLATOR
MUTE
DELAY
IC501 M65843AFP
(DIGITAL ECHO) (EXCEPT 410, 413R)
415K/615K ONLY
X551
400K
X501
2M
600 SERIES ONLY
TR537
TR538
JS553
JS501
610, 613R ONLY
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
H:ON
+12V CDM (CD MECHA.)
TR101
CUR DET
+12V LED (LED CIR)
TR102
+12V (PRE CIR)
TR103
+12V DME (DECK MECHA.)
TR104
1Ω
POWER SUPPLY CURRENT OVER DETECT
600 SERIES ONLY
DPL-L
DPL-R
NORMAL
PHANTOM
3CH-ST
IC3008
BU4094BCF
(DATA SEPARATOR)
Q5
Q1
Q2
Q3
Q4
VDD
OE
+12V LED
DATA
CLK
STB
TR3005
STB-LED
TR3003
CLK-LED
DATA-L2
IC3001 : M38197MA-148FP
(OPERATION & SYSTEM CONTROL MI-COM)
CLK-DSC
DATA-DSC
CLK-SC
DATA-SC
STB-VR
STB-AMP
CLK-AMP
STB-PRE
POW-DOWN
POWER DOWN
TO TC-DK (A) PCB
IC101
BU4094BC
(DATA SEPARATOR)
POWER ON/OFF
F-MUTE
S-MUTE
IC801
BU4094BC
(DATA SEPARATOR)
SEL-A
SEL-B
I-MUTE-S
ECHO1
ECHO2
QS'
+5V
IC802
BU4094BC
(DATA SEPARATOR)
NORMAL
4CH
2CH
C-CNT
N-C-B
N-C-A
N-C-E
Q6
Q7
Q8
IC3200 BU4094BCF
(DATA SEPARATOR)
SYS610 (C) PCB
[SYS410 (C) PCB]
DATA-L1
TR3004
DATA.LED
MAIN410 (A) PCB
SYS610 (A) PCB [SYS410 (A) PCB]
[ ] : 400 SERIES MODELS ONLY

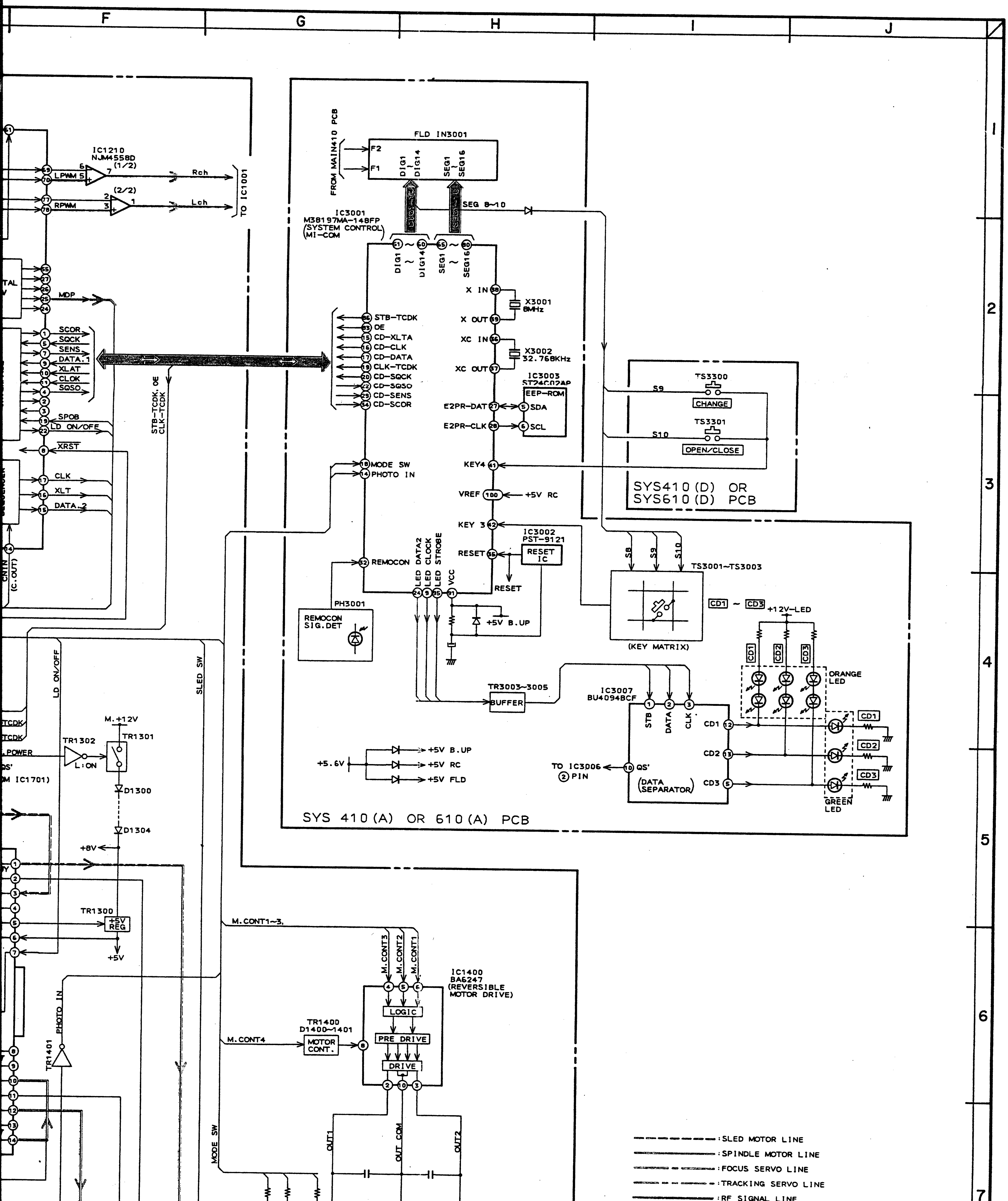

F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS701
IES ONLY
CLK-SC
DATA-SC
6.2V
6.2V
R-CH
+12V
C-CNT
N-C-A
N-C-B
N-C-E
IC701 M62422FP
SOUND CONTROLLER:
(VOCAL CUT, TONE CONTROL, MIC MIXING, SURROUND, 3 BAND G-EQ, BASS BOOST)
μ-COM INTERFACE
BUFAMP1
BUFAMP2
IVAMP
VCAMP
BASAMP1
MIDAMP1
BBAMP1
MIXAMP1
EFFAMP1
FINAMP1
MIXAMP2
EFFAMP2
FINAMP2
BASAMP2
MIDAMP2
BBAMP2
R-CH
R-CH
R-CH
400 SERIES ONLY
-7V
CS
IC761
600:TC9412P
400:TC9260P
(EVR)
CLK-AMP
DATA
STB-VR
CK
DATA
STB
( ):400 SERIES ONLY
(14)
(15)
CS1
CS2
600 SERIES ONLY
FROM TR152
D142
(POWER DOWN DET)
F-MUTE
TR320
IC201
SI18751
(POWER AMP)
+VCC
-VCC
H:ON
TR201
IC202
SI18751
(POWER AMP)
TR251
600 SERIES ONLY
J201
PHONES
L
R
FRONT
TM201
+22V POWER LIMITER
MAIN +VCC
TR130
L:ON
TR132
TR134
TR131
POWER ON/OFF
H:ON
22V
22V
TR135
-22V POWER LIMITER
MAIN -VCC
TR137
600 SERIES ONLY
IC751
TC9412P (EVR)
SURROUND
CENTER
CLK-AMP
DATA
STB-VR
CK
DATA
STB
CS1
CS2
+7V
IC203
SI18751
(POWER AMP)
IC204
SI18751
(POWER AMP)
TR221
TR271
TR321
S-MUTE
J301
SURROUND L
SURROUND R
CENTER
IDL5V
PROTECT
(TO SYS610 (B) PCB OR SYS410 (B) PCB)
TR61
H:ON
DC BALANCE DETECT
TR153
L:ON
DC BALANCE DETECTION CIRCUIT
TR155
TR154
+:ON
-:ON
+12V DME
POWER AMP DC BALANCE DET
+12V CDM
(CD MECHA.)
TR101
CUR DET
+12V LED
(LED CIR)
TR102
CUR DET
+12V
(PRE CIR)
TR103
CUR DET
+12V DME
(DECK MECHA.)
TR104
CUR DET
1Ω
POWER SUPPLY CURRENT OVER DETECT
IDL5V
POWER DOWN
TO FRONT MUTE (D142)
TR158
H:ON
TR151
7V REG
TR152
H:ON
5.1V
7.5V
POWER DOWN DETECT CIRCUIT
POWER SUPPLY DC BALANCE
5.6V
5.6V
MAIN -VCC
MAIN +VCC
+7V
6.2V
6.2V
-7V
D1
F4
5A
[2.5A]
F3
5A
[2.5A]
-VP
15Ω
TR81
-33V REG
TR82
CUR DET
DOUBLE VOLTAGE RECTFIER
D81~83
C81~83
+5.6V
IDL5V
+5V
TR25
IC21
ML7805FA
5V REG
TR23
1Ω
TR21
CUR DET
L:ON
TR24
H:ON
TR22
LATCH
D5~D8
POWER ON/OFF
H:ON
TR26
TR41
CUR DET
0.47Ω
TR44
TR45
12V REG
L:ON
POWER ON/OFF
H:ON
TR43
600 SERIES ONLY
NORMAL
4CH
2CH
C-CNT
N-C-B
N-C-A
N-C-E
Q1
Q3
Q4
Q5
Q6
Q7
Q8
STB
DATA
CLK
OE
+5V
CLK-AMP
VF1
-VP
5.6V
VF2
MAIN410 (C) PCB

NORMAL SIGNAL LINE (L-CH)
EFFECT SIGNAL LINE (DELAY & D.P.L)
MIC SIGNAL LINE
CENTER & SURROUND SIGNAL LINE

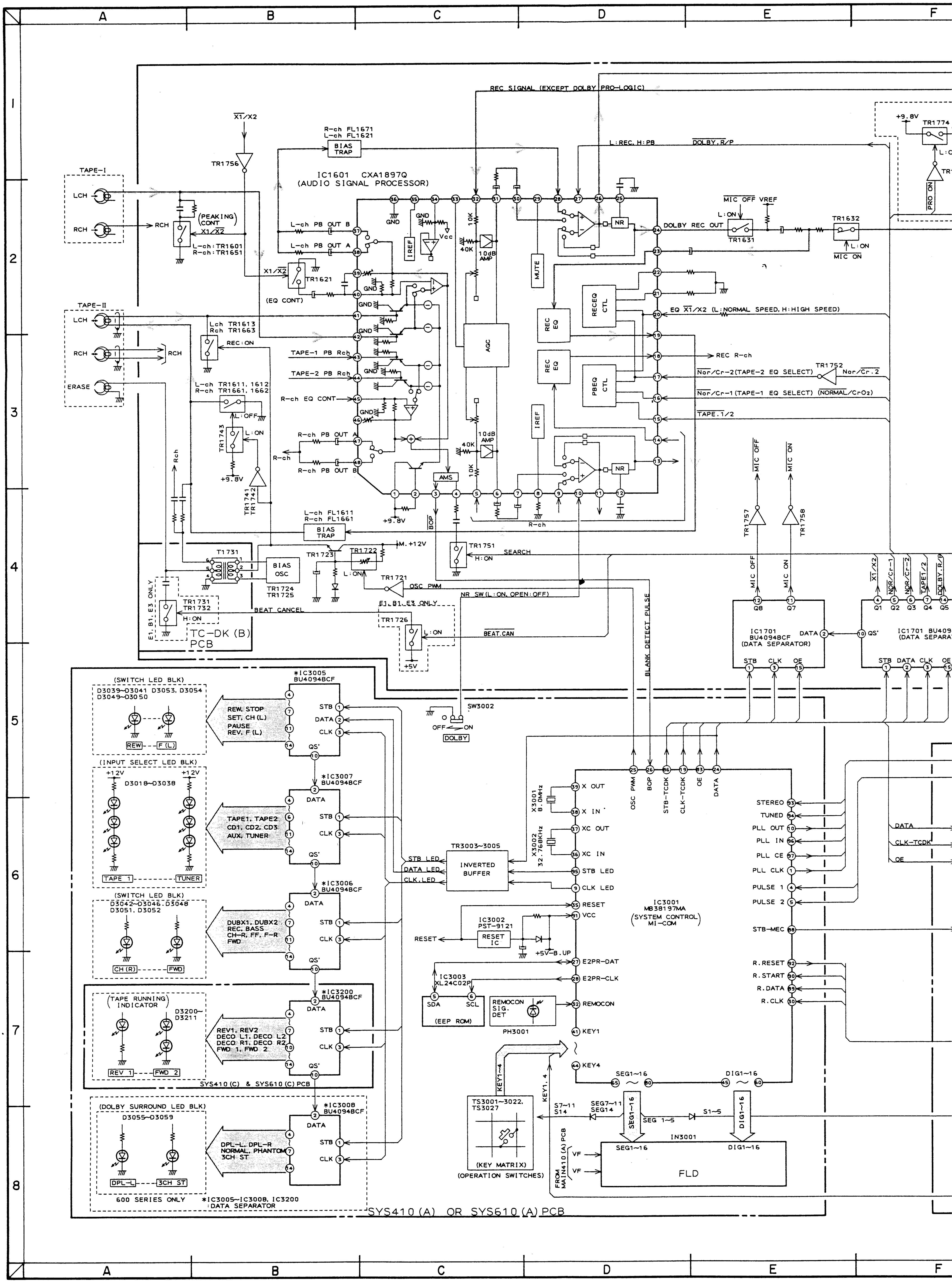
AC-410/413R/415K
AC-610/613R/615K
MAIN
BLOCK DIAGRAM
No.3-1 C104751M
A1

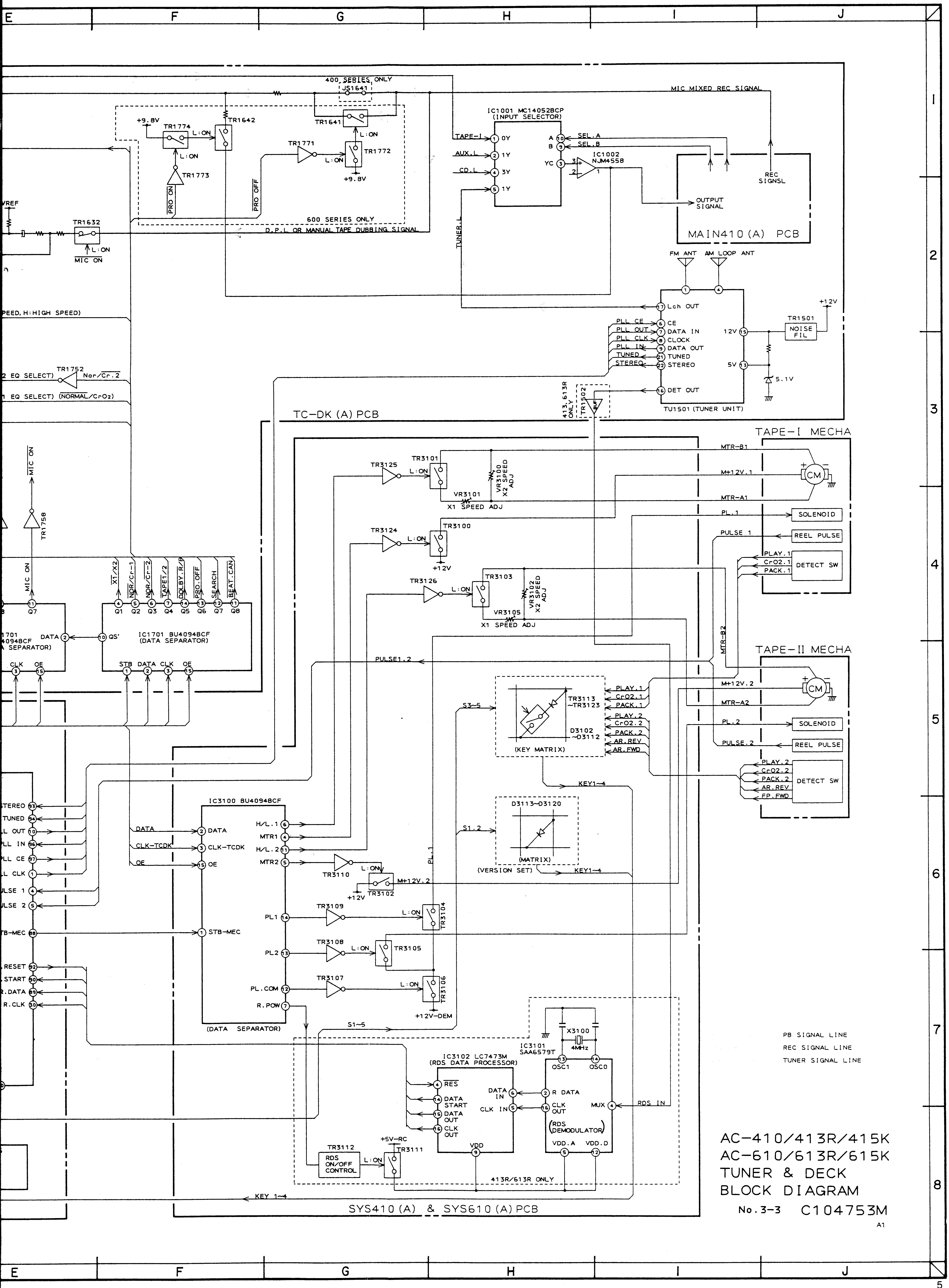


A
B
C
D
E
F
1
2
3
4
5
6
7
8
X1200
16.9344MHz
IC1200 CXD2508AQ
(DIGITAL SIGNAL PROCESSOR)
DIGITAL FILTER + 1BIT DAC
D/A INTERFACE
DIGITAL OUT
DIGITAL CLV
ERROR CORRECTOR
16K RAM
EFM DEMODULATOR
SUB CODE PROCESSOR
CPU INTERFACE
CLOCK GENERATOR
ASYMMETRY CORRECTOR
DIGITAL PLL
SERVO AUTO SEQUENCER
LPWM 5
RPWM
MDP
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
CLK
XLT
DATA.2
SLED SW
RF
FOK
SEIN
CNIN (C.OUT)
IC1210 NJM455
IC1100 CXA1782BQ
(RF I-V AMP/RF AMP)
FOCUS DRIVE
FE-O
FE-M
TA-M
DFCT
FS4
FS2
FS1
TG2
F SET
ATSC
WINDOW COMP.
TM1
FCS PHASE COMPENSATION
TZC COMP
TM7
TM3
TM4
TM2
TM5
TM6
TG1
TA-O
SL-O
TOG1 TOG2 TOG3
BAL1 BAL2 BAL3
TE AMP
E IV AMP
F IV AMP
FE AMP
HPF COMP
LPF COMP
TRACKING PHASE COMPENSATION
I SET
+5V
FZC COMP
TOG1~3 BAL1~4
FS1~4
TG1~2
TM1~7
PS1~4
OUTPUT DECODER
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
IIL
TTL
CLK
XLT
DATA.2
XRST
C.OUT (CNIN)
SENS
FE-BIAS
+5V
VR1200 FOCUS OFF-SET
RF IV AMP2
RF IV AMP1
APC
FOK
MIRR
LEVEL S
DFCT
PHD2
PHD1
PHD
LD
RF-M
RF-O
RF-I
FOK
RF-O
MONITOR
+5V
TR1100
TC-DK (A) PCB
TRACKING DRIVE
SLED DRIVE
M.CONT1
M.CONT2
M.CONT3
M.CONT4
XSRT
Q1 Q2 Q3 Q4 Q6
OE
STB
CLK
Q5
DATA
STB-TCDK
CLK-TCDK
CD.POWER
QS'
(FROM IC1701)
IC1702
BU4094BCF
(DATA SEPARATOR)
LD ON/OFF
TR1302
L:ON
M.+1
IC1300 KA9258D
(MOTOR DRIVE)
LEVEL SHIFT
BUY
10K
T.S.D
REGULATOR
MUTE
50K
+8V
+8V
TR1300
+5V REG
+5V
PHOTO IN
TR1401
MDP
+5V
W1401
YMC03 (A) PCB
SPINDLE MOTOR
M
E
F
+B
A
B
C
D
LD
PICK-UP KSS-213C
FOCUS COIL
TRACKING COIL


F
G
H
I
J
1
2
3
4
5
6
7
8
IC1210
NJM4558D
(1/2)
(2/2)
LPWM
RPWM
Rch
Lch
TO IC1001
MDP
SCOR
SQCK
SENS
DATA.1
XLAT
CLOK
SQSO
SPOB
LD ON/OFF
XRST
CLK
XLT
DATA.2
CNIN (C.OUT)
STB-TCDK, OE
CLK-TCDK
FROM MAIN410 PCB
FLD IN3001
F2
F1
DIG1 ~ DIG14
SEG1 ~ SEG16
SEG 8~10
IC3001
M38197MA-148FP
(SYSTEM CONTROL)
(MI-COM)
STB-TCDK
OE
CD-XLTA
CD-CLK
CD-DATA
CLK-TCDK
CD-SQCK
CD-SQSO
CD-SENS
CD-SCOR
X IN
X OUT
XC IN
XC OUT
X3001
8MHz
X3002
32.768KHz
IC3003
ST24C02AP
EEP-ROM
E2PR-DAT
E2PR-CLK
SDA
SCL
MODE SW
PHOTO IN
KEY4
VREF
+5V RC
KEY 3
IC3002
PST-9121
RESET IC
RESET
REMOCON
LED DATA2
LED CLOCK
LED STROBE
VCC
+5V B.UP
PH3001
REMOCON SIG.DET
TS3300
CHANGE
TS3301
OPEN/CLOSE
S9
S10
SYS410(D) OR
SYS610(D) PCB
S8
TS3001~TS3003
(KEY MATRIX)
CD1 ~ CD3
+12V-LED
ORANGE LED
GREEN LED
TR3003~3005
BUFFER
IC3007
BU4094BCF
STB
DATA
CLK
QS'
(DATA SEPARATOR)
TO IC3006 ② PIN
+5.6V
+5V B.UP
+5V RC
+5V FLD
SYS 410(A) OR 610(A) PCB
LD ON/OFF
SLED SW
M.+12V
TR1302
TR1301
L:ON
POWER
QS'
IC1701
D1300
D1304
+8V
TR1300
+5V REG
+5V
PHOTO IN
TR1401
M.CONT1~3
M.CONT3
M.CONT2
M.CONT1
IC1400
BA6247
(REVERSIBLE MOTOR DRIVE)
LOGIC
PRE DRIVE
DRIVE
M.CONT4
TR1400
D1400~1401
MOTOR CONT.
OUT1
OUT COM
OUT2
MODE SW
W1400
SPINDLE MOTOR
SLED MOTOR
SLED SW
OPEN SW
CLOSE SW
CLAMP SW
LOADING MOTOR
MECHA BLK
YMC03(B) PCB
: SLED MOTOR LINE
: SPINDLE MOTOR LINE
: FOCUS SERVO LINE
: TRACKING SERVO LINE
: RF SIGNAL LINE
: SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
CD
BLOCK DIAGRAM
No.3-2 C104752M
A1

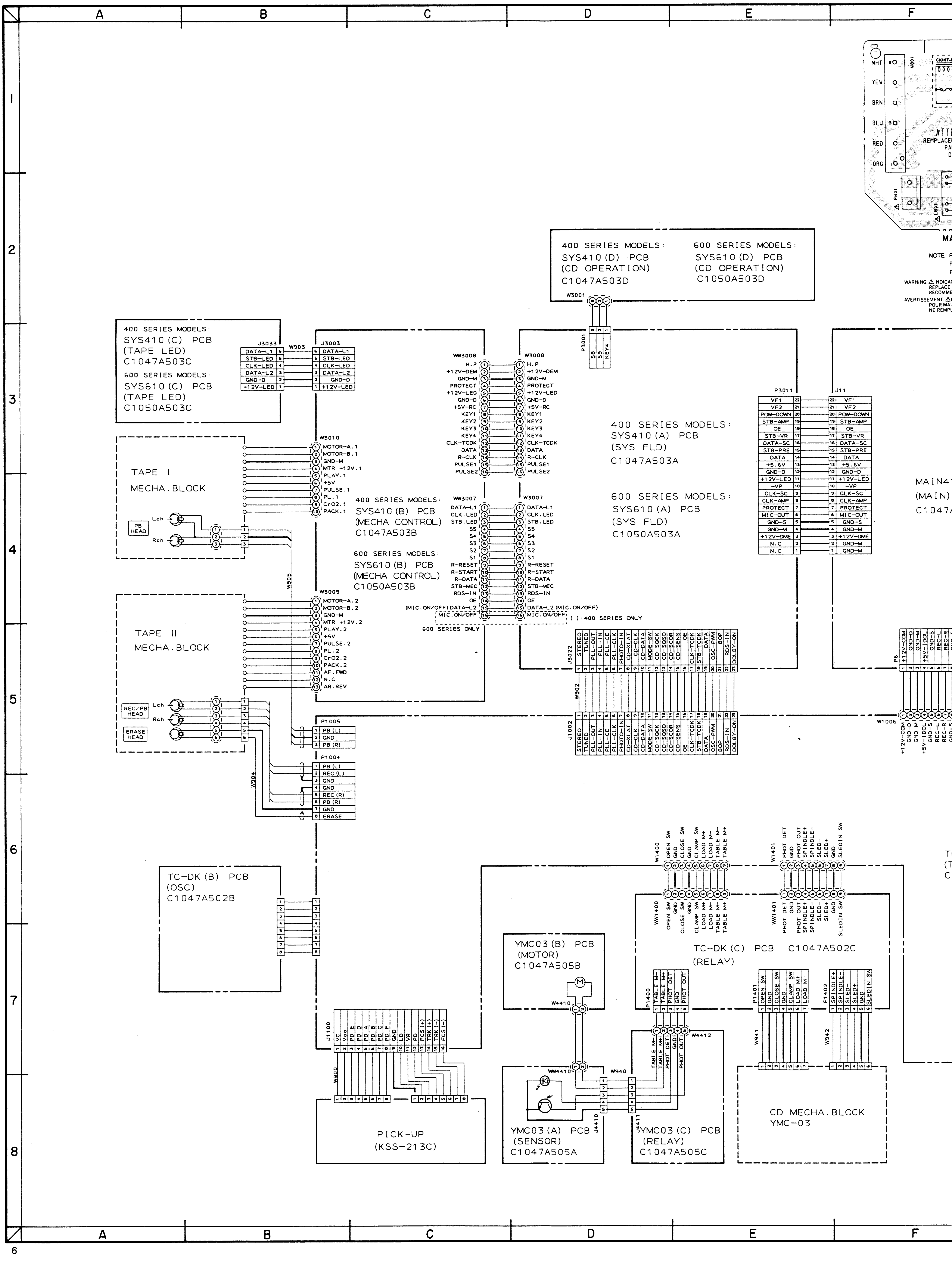

A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC SIGNAL (EXCEPT DOLBY PRO-LOGIC)
L:REC, H:PB
DOLBY. R/P
X1/X2
R-ch FL1671
L-ch FL1621
BIAS TRAP
TR1756
IC1601 CXA1897Q
(AUDIO SIGNAL PROCESSOR)
TAPE-I
LCH
RCH
(PEAKING CONT)
X1/X2
L-ch:TR1601
R-ch:TR1651
L-ch PB OUT B
L-ch PB OUT A
X1/X2
TR1621
(EQ CONT)
GND
IREF
Vcc
10K
40K
10dB AMP
MUTE
NR
DOLBY REC OUT
MIC OFF VREF
L:ON
TR1631
TR1632
MIC ON
+9.8V
TR1774
PRO ON
TAPE-II
ERASE
Lch TR1613
Rch TR1663
REC:ON
TAPE-1 PB Rch
TAPE-2 PB Rch
R-ch EQ CONT
AGC
REC EQ
RECEQ CTL
PBEQ CTL
EQ X1/X2 (L:NORMAL SPEED, H:HIGH SPEED)
REC R-ch
Nor/Cr-2(TAPE-2 EQ SELECT)
TR1752
Nor/Cr.2
Nor/Cr-1(TAPE-1 EQ SELECT) (NORMAL/CrO2)
TAPE.1/2
L-ch TR1611, 1612
R-ch TR1661, 1662
L:OFF
TR1743
L:ON
+9.8V
TR1741
TR1742
Rch
R-ch PB OUT A
R-ch PB OUT B
R-ch
AMS
IREF
MIC OFF
MIC ON
TR1757
TR1758
L-ch FL1611
R-ch FL1661
BIAS TRAP
BOP
TR1751
H:ON
SEARCH
T1731
BIAS OSC
TR1724
TR1725
TR1723
TR1722
M.+12V
TR1721
OSC PWM
NR SW(L:ON, OPEN:OFF)
BEAT CANCEL
E1, B1, E3 ONLY
TR1731
TR1732
H:ON
TC-DK (B) PCB
TR1726
L:ON
BEAT.CAN
+5V
BLANK DETECT PULSE
IC1701 BU4094BCF
(DATA SEPARATOR)
DATA
QS'
STB
CLK
OE
Q8
Q7
Q1
Q2
Q3
Q4
Q5
X1/X2
NOR/Cr-1
NOR/Cr-2
TAPE1/2
DOLBY.R/P
IC1701 BU409
(DATA SEPARAT
(SWITCH LED BLK)
D3039~D3041 D3053, D3054
D3049~D3050
REW
F (L)
REW, STOP
SET, CH (L)
PAUSE
REV, F (L)
*IC3005
BU4094BCF
SW3002
OFF
ON
DOLBY
(INPUT SELECT LED BLK)
+12V
D3018~D3038
TAPE 1
TUNER
TAPE1, TAPE2
CD1, CD2, CD3
AUX, TUNER
*IC3007
BU4094BCF
STB LED
DATA LED
CLK.LED
TR3003~3005
INVERTED BUFFER
(SWITCH LED BLK)
D3042~D3046, D3048
D3051, D3052
CH (R)
FWD
DUBX1, DUBX2
REC, BASS
CH-R, FF, F-R
FWD
*IC3006
BU4094BCF
OSC PWM
BOP
STB-TCDK
CLK-TCDK
OE
DATA
X3001 8.0MHz
X OUT
X IN
X3002 32.768KHz
XC OUT
XC IN
STB LED
CLK LED
RESET
VCC
IC3001
MB38197MA
(SYSTEM CONTROL MI-COM)
IC3002 PST-9121
RESET IC
RESET
+5V-B.UP
E2PR-DAT
E2PR-CLK
IC3003 XL24C02P
SDA
SCL
(EEP ROM)
REMOCON SIG. DET
PH3001
REMOCON
KEY1
KEY4
STEREO
TUNED
PLL OUT
PLL IN
PLL CE
PLL CLK
PULSE 1
PULSE 2
STB-MEC
R.RESET
R.START
R.DATA
R.CLK
DATA
CLK-TCDK
OE
(TAPE RUNNING INDICATOR)
D3200~D3211
REV 1
FWD 2
REV1, REV2
DECO L1, DECO L2
DECO R1, DECO R2
FWD 1, FWD 2
*IC3200
BU4094BCF
SYS410 (C) & SYS610 (C) PCB
KEY1~4
KEY1, 4
SEG1~16
DIG1~16
TS3001~3022, TS3027
(KEY MATRIX)
(OPERATION SWITCHES)
S7~11
S14
SEG7~11
SEG14
SEG 1~5
S1~5
IN3001
FLD
FROM MAIN410 (A) PCB
VF
(DOLBY SURROUND LED BLK)
D3055~D3059
DPL-L
3CH ST
DPL-L, DPL-R
NORMAL, PHANTOM
3CH ST
*IC3008
BU4094BCF
600 SERIES ONLY
*IC3005~IC3008, IC3200
:DATA SEPARATOR
SYS410 (A) OR SYS610 (A) PCB

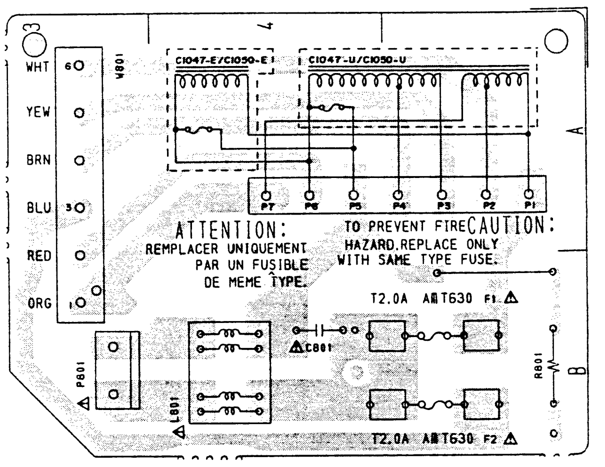

E
F
G
H
I
J
1
2
3
4
5
6
7
8
400 SERIES ONLY
JS1641
MIC MIXED REC SIGNAL
+9.8V
TR1774
L:ON
TR1642
TR1641
L:ON
TR1771
TR1772
+9.8V
TR1773
PRO ON
PRO OFF
600 SERIES ONLY
D.P.L OR MANUAL TAPE DUBBING SIGNAL
VREF
TR1632
L:ON
MIC ON
IC1001 MC14052BCP
(INPUT SELECTOR)
TAPE-I
AUX.L
CD.L
TUNER.L
0Y
1Y
3Y
1Y
A
B
YC
SEL.A
SEL.B
IC1002
NJM4558
OUTPUT SIGNAL
REC SIGNSL
MAIN410 (A) PCB
FM ANT
AM LOOP ANT
Lch OUT
CE
DATA IN
CLOCK
DATA OUT
TUNED
STEREO
DET OUT
PLL CE
PLL OUT
PLL CLK
PLL IN
TUNED
STEREO
12V
5V
+12V
TR1501
NOISE FIL
5.1V
TU1501 (TUNER UNIT)
413, 613R ONLY
TR1502
(SPEED, H:HIGH SPEED)
TR1752
Nor/Cr.2
(2 EQ SELECT)
(1 EQ SELECT) (NORMAL/CrO2)
TC-DK (A) PCB
TAPE-I MECHA
MTR-B1
M+12V.1
MTR-A1
CM
PL.1
SOLENOID
PULSE 1
REEL PULSE
PLAY.1
CrO2.1
PACK.1
DETECT SW
TR3125
TR3101
L:ON
VR3100 X2 SPEED ADJ
VR3101
X1 SPEED ADJ
TR3124
TR3100
L:ON
+12V
TR3126
TR3103
L:ON
VR3102 X2 SPEED ADJ
VR3105
X1 SPEED ADJ
MIC ON
TR1758
MIC ON
Q7
XT/X2
NOR/Cr-1
NOR/Cr-2
TAPE1/2
DOLBY.R/P
PRO.OFF
SEARCH
BEAT.CAN
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8
IC1701 BU4094BCF
(DATA SEPARATOR)
DATA
QS'
STB DATA CLK OE
CLK OE
MTR-B2
TAPE-II MECHA
PULSE1.2
M+12V.2
MTR-A2
PL.2
PULSE.2
SOLENOID
REEL PULSE
PLAY.2
CrO2.2
PACK.2
AR.REV
FP.FWD
DETECT SW
S3~5
TR3113 ~TR3123
D3102 ~D3112
(KEY MATRIX)
PLAY.1
CrO2.1
PACK.1
PLAY.2
CrO2.2
PACK.2
AR.REV
AR.FWD
KEY1~4
D3113~D3120
S1.2
(MATRIX)
(VERSION SET)
KEY1~4
STEREO
TUNED
PLL OUT
PLL IN
PLL CE
PLL CLK
PULSE 1
PULSE 2
STB-MEC
RESET
START
R.DATA
R.CLK
IC3100 BU4094BCF
DATA
CLK-TCDK
OE
STB-MEC
H/L.1
MTR1
H/L.2
MTR2
PL1
PL2
PL.COM
R.POW
(DATA SEPARATOR)
TR3110
L:ON
M+12V.2
+12V
TR3102
TR3109
L:ON
TR3104
TR3108
L:ON
TR3105
TR3107
L:ON
TR3106
+12V-DEM
PL.1
S1~5
IC3101
SAA6579T
X3100
4MHz
OSC1
OSCO
IC3102 LC7473M
(RDS DATA PROCESSOR)
RES
DATA START
DATA OUT
CLK OUT
DATA IN
CLK IN
VDD
R DATA
CLK OUT
(RDS DEMODULATOR)
MUX
RDS IN
VDD.A
VDD.D
TR3112
RDS ON/OFF CONTROL
L:ON
+5V-RC
TR3111
413R/613R ONLY
KEY 1~4
SYS410 (A) & SYS610 (A) PCB
PB SIGNAL LINE
REC SIGNAL LINE
TUNER SIGNAL LINE

AC-410/413R/415K
AC-610/613R/615K
TUNER & DECK
BLOCK DIAGRAM

No.3-3 C104753M

A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
400 SERIES MODELS: SYS410 (D) PCB (CD OPERATION) C1047A503D
600 SERIES MODELS: SYS610 (D) PCB (CD OPERATION) C1050A503D
W3001
P3001
S8
S9
KEY4
400 SERIES MODELS: SYS410 (C) PCB (TAPE LED) C1047A503C
600 SERIES MODELS: SYS610 (C) PCB (TAPE LED) C1050A503C
J3033
W903
J3003
DATA-L1
STB-LED
CLK-LED
DATA-L2
GND-D
+12V-LED
WW3008
W3008
H.P
+12V-DEM
GND-M
PROTECT
+12V-LED
GND-D
+5V-RC
KEY1
KEY2
KEY3
KEY4
CLK-TCDK
DATA
R-CLK
PULSE1
PULSE2
400 SERIES MODELS: SYS410 (A) PCB (SYS FLD) C1047A503A
600 SERIES MODELS: SYS610 (A) PCB (SYS FLD) C1050A503A
P3011
J11
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
+5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
N.C
MAIN4
(MAIN)
C1047
TAPE I MECHA.BLOCK
W3010
MOTOR-A.1
MOTOR-B.1
GND-M
MTR +12V.1
PLAY.1
+5V
PULSE.1
PL.1
CrO2.1
PACK.1
PB HEAD
Lch
Rch
400 SERIES MODELS: SYS410 (B) PCB (MECHA CONTROL) C1047A503B
600 SERIES MODELS: SYS610 (B) PCB (MECHA CONTROL) C1050A503B
WW3007
W3007
DATA-L1
CLK.LED
STB.LED
S5
S4
S3
S2
S1
R-RESET
R-START
R-DATA
STB-MEC
RDS-IN
OE
(MIC.ON/OFF) DATA-L2
MIC.ON/OFF
600 SERIES ONLY
DATA-L2 (MIC.ON/OFF)
( ): 400 SERIES ONLY
W905
TAPE II MECHA.BLOCK
W3009
MOTOR-A.2
MOTOR-B.2
GND-M
MTR +12V.2
PLAY.2
+5V
PULSE.2
PL.2
CrO2.2
PACK.2
AF.FWD
N.C
AR.REV
REC/PB HEAD
ERASE HEAD
J3022
W902
J1002
STEREO
TUNED
PLL-OUT
PLL-IN
PLL-CE
PLL-CLK
PHOTO-IN
CD-XLAT
CD-CLK
CD-DATA
MODE-SW
CD-SQCK
CD-SQSO
CD-SCOR
CD-SENS
OE
CLK-TCDK
STB-TCDK
DATA
OSC-PWM
BOP
RDS-IN
DOLBY-ON
P6
+12V-COM
GND-D
GND-M
+5V-IDOL
GND-S
REC-L
REC-R
W1006
P1005
PB (L)
GND
PB (R)
P1004
PB (L)
REC (L)
GND
GND
REC (R)
PB (R)
GND
ERASE
W904
TC-DK (B) PCB (OSC) C1047A502B
W1400
WW1400
OPEN SW
GND
CLOSE SW
GND
CLAMP SW
LOAD M+
LOAD M-
TABLE M-
TABLE M+
W1401
WW1401
PHOT DET
GND
PHOT OUT
SPINDLE+
SPINDLE-
SLED-
SLED+
GND
SLEDIN SW
TC-DK (C) PCB C1047A502C (RELAY)
YMC03 (B) PCB (MOTOR) C1047A505B
M
W4410
P1400
TABLE M-
TABLE M+
PHOT DET
GND
PHOT OUT
P1401
OPEN SW
GND
CLOSE SW
GND
CLAMP SW
LOAD M+
LOAD M-
P1402
SPINDLE+
SPINDLE-
SLED-
SLED+
GND
SLEDIN SW
J1100
VC
Vcc
PD E
PD D
PD A
PD B
PD C
PD F
GND
LD
VR
PD
FCS(+)
TRK(+)
TRK(-)
FCS(-)
W900
W4412
WW4410
W940
J4410
J4411
W941
W942
PICK-UP (KSS-213C)
YMC03 (A) PCB (SENSOR) C1047A505A
YMC03 (C) PCB (RELAY) C1047A505C
CD MECHA.BLOCK YMC-03
WHT
YEW
BRN
BLU
RED
ORG
W801
P801
L801
ATT
REMPLACE
MA
NOTE: F
WARNING: ⚠ INDICAT REPLACE RECOMME
AVERTISSEMENT: ⚠ POUR MAI NE REMPL
TC
(T
C

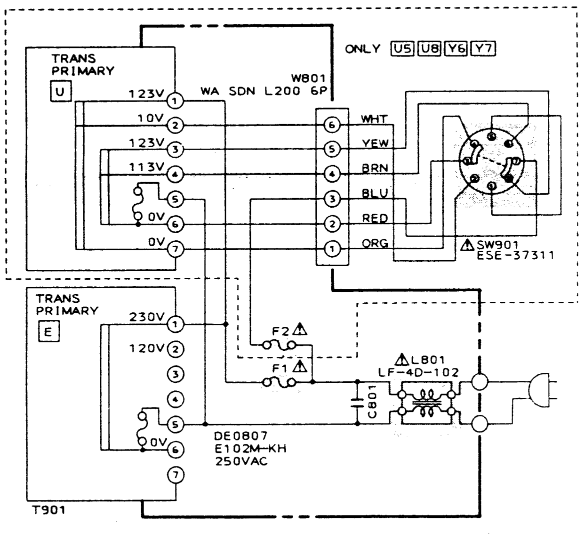

WHT
YEW
BRN
BLU
RED
ORG
W801
C1047-E/C1050-E
C1047-U/C1050-U
ATTENTION:
REMPLACER UNIQUEMENT
PAR UN FUSIBLE
DE MEME TYPE.
CAUTION:
TO PREVENT FIRE
HAZARD.REPLACE ONLY
WITH SAME TYPE FUSE.
T2.0A AT630 F1
C801
P801
L801
R801
T2.0A AT630 F2

MAIN410(B) PCB C1047A501B

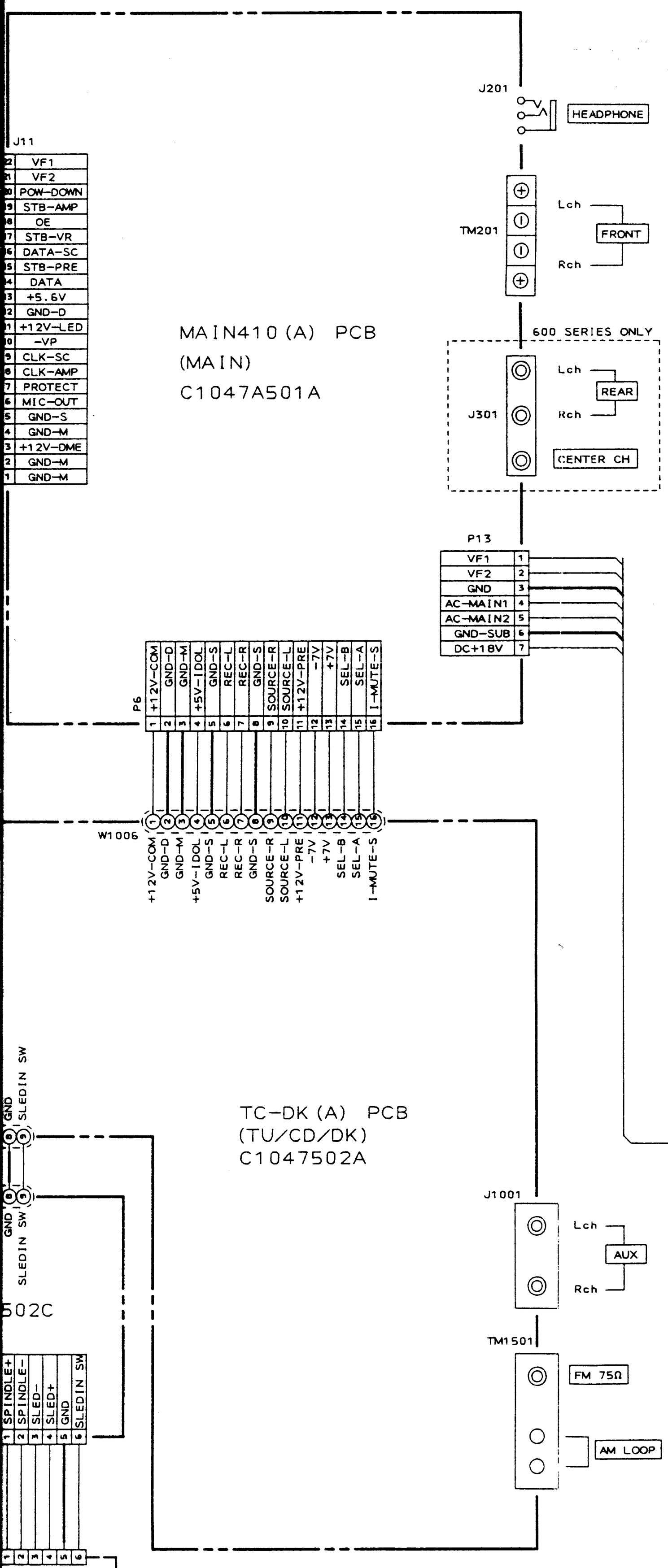
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

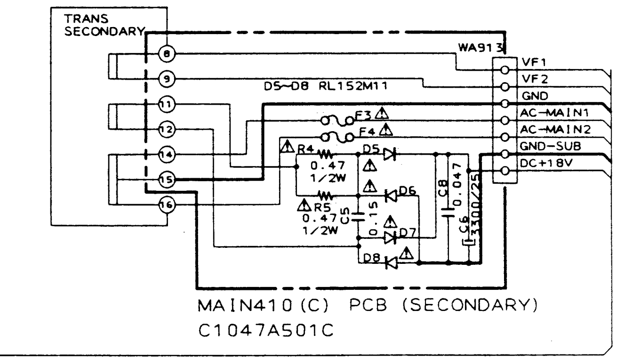
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


ONLY U5 U8 Y6 Y7
TRANS PRIMARY
U
123V
10V
123V
113V
0V
0V
W801
WA SDN L200 6P
WHT
YEW
BRN
BLU
RED
ORG
SW901
ESE-37311
TRANS PRIMARY
E
230V
120V
0V
F2
F1
L801
LF-4D-102
C801
DE0807
E102M-KH
250VAC
T901

MAIN410 (B) PCB (PRIMARY)
C1047A501B


J11
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
+5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
GND-M
GND-M
MAIN410 (A) PCB
(MAIN)
C1047A501A
J201
HEADPHONE
TM201
Lch
Rch
FRONT
600 SERIES ONLY
J301
REAR
CENTER CH
P13
VF1
VF2
GND
AC-MAIN1
AC-MAIN2
GND-SUB
DC+18V
P6
+12V-COM
GND-D
GND-M
+5V-IDOL
GND-S
REC-L
REC-R
GND-S
SOURCE-R
SOURCE-L
+12V-PRE
-7V
+7V
SEL-B
SEL-A
I-MUTE-S
W1006
TC-DK (A) PCB
(TU/CD/DK)
C1047502A
GND
SLEDIN SW
502C
SPINDLE+
SPINDLE-
SLED-
SLED+
GND
SLEDIN SW
BLOCK
J1001
AUX
TM1501
FM 75Ω
AM LOOP

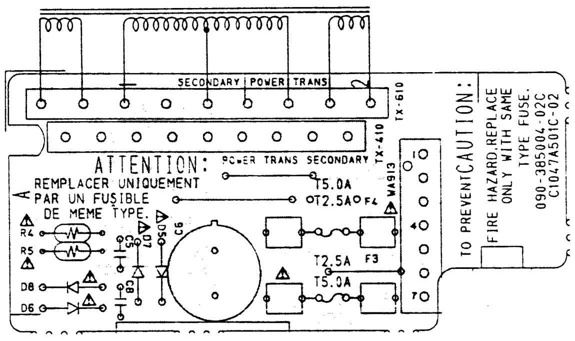
		F1	F2	F3	F4
410 413R 415K	E1. E3. B1. S1	T630MA	–	T2.5A	T2.5A
	U5. U8. Y6. Y7	T630MA	T630MA	T2.5A	T2.5A
610 613R 615K	E1. E3. B1. S1	T2.0A	–	T5.0A	T5.0A
	U5. U8. Y6. Y7	T2.0A	T2.0A	T5.0A	T5.0A


TRANS SECONDARY
WA913
VF1
VF2
GND
AC-MAIN1
AC-MAIN2
GND-SUB
DC+18V
D5~D8 RL152M11
F3
F4
R4
0.47
1/2W
R5
0.47
1/2W
C5
0.15
D5
D6
D7
D8
C8
0.047
C6
3300/25

MAIN410 (C) PCB (SECONDARY)
C1047A501C

⚠POWER TRANSFORMER:

400 SERIES	E1 E3 B1 S1	410 : C1047E
	E1	413R : C1047E
	U5 U8 Y6 Y7	415K : C1047U
600 SERIES	E1 E3 B1 S1	610 : C1049E
	E1	613R : C1049E
	U5 U8 Y6 Y7	615K : C1047U


SECONDARY POWER TRANS
ATTENTION:
REMPLACER UNIQUEMENT
PAR UN FUSIBLE
DE MEME TYPE.
POWER TRANS SECONDARY
T5.0A
T2.5A F4
R4
R5
D8
D6
C5
D7
D5
C6
C8
T2.5A F3
T5.0A
WA913
TX-410
TX-610
CAUTION:
TO PREVENT FIRE HAZARD.REPLACE
ONLY WITH SAME
TYPE FUSE.
090-385004-02C
C1047A501C-02

MAIN410(C) PCB C1047A501C

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING. ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

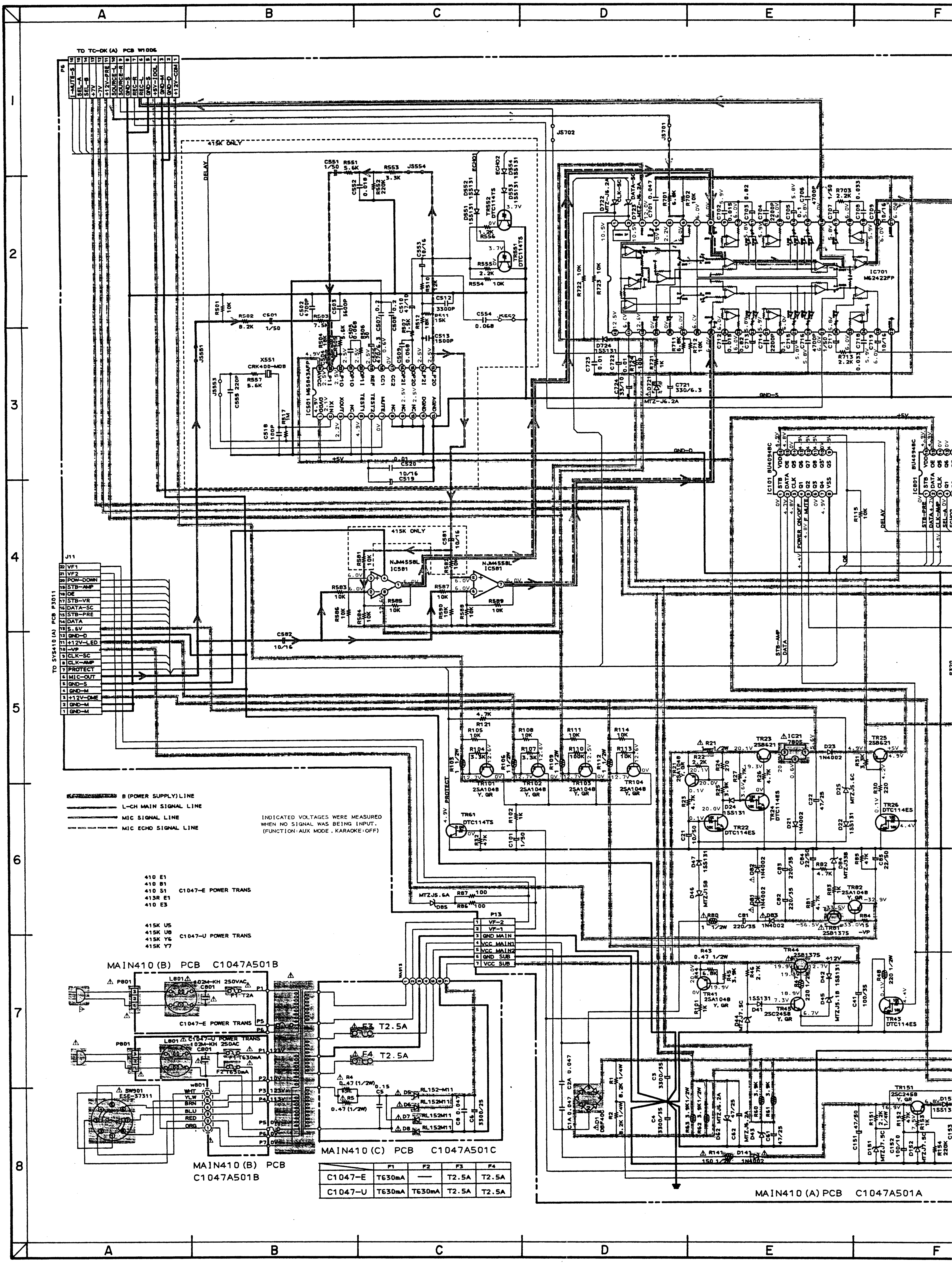
AVERTISSEMENT. ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SECURITE.
POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL
NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT

WARNING : ⚠ AND INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER' S RECOMMENDED
PARTS

AVERTISSMENT : ⚠ ET , ILS INDIQUENT LES
COMPOSTANTS CRITIQUES DE SÉCURITÉ,
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
DE L' APPAREIL, NE REMPLACER QUE DES
PIÈCES RECOMMANDEES PAR LE FABRICANT

AC-410/413R/415K
AC-610/613R/615K
CONNECTION DIAGRAM
No.6-1 C104701M

A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO TC-DK (A) PCB W1006
P6
-MUTE-S
SEL-A
SEL-B
+7V
-7V
+12V-PRE
SOURCE-L
SOURCE-R
GND-S
REC-R
REC-L
GND-S
+5V-IDOL
GND-M
GND-D
+12V-CDM
JS702
JS701
415K ONLY
DELAY
C551 1/50
R551 5.6K
R553 3.3K
JS554
C552 0.018
R552 220K
D551 1SS131
D552 1SS131
ECHO1
ECHO2
D553 1SS131
D554 1SS131
TR552 DTC114TS
TR551 DTC114TS
R556 1.2K
R555 2.2K
R554 10K
C553 10/16
R510 12K
C512 3300P
R511 15K
C554 0.068
R552
C513 1500P
R501 10K
R502 8.2K
C601 1/50
C502 4700P
C503 5600P
R503 7.5K
IC501 M65843AFP
X551 CRK400-MOB
R557 5.6K
C555 220P
JS553
JS551
C518 100P
R517 1M
C520 0.01
C519 10/16
+5V
GND-D
C722
C723
C724 33/10
D721 MTZ-J6.2A
C721 330/6.3
R721 1K
R724 100
D724 1SS131
D722 MTZ-J6.2A
D723 1SS131
DATA-SC
CLK-SC
C701 0.047
R701 6.8K
R702 10K
R722 10K
R723 10K
R711 6.8K
R712 10K
C702 0.015
C703 0.82
C704
C705 5.8V
C706
C707 1/50
R703 2.2K
C708 0.033
C709
C713
C714 2200P
C715
C716
C717
C718 4700P
C719 10/16
R713 2.2K
IC701 M62422FP
GND-S
IC101 BU4094BC
IC801 BU4094BC
STB
DATA
CLK
VDD
OE
VSS
POWER ON/OFF
MUTE
R115 10K
DELAY
STB-AMP
DATA
STB-PRE
DATA
CLK-AMP
SEL-A
J11
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
GND-M
GND-M
TO SYS410 (A) PCB P3011
415K ONLY
C581 10/16
R581 10K
R582 10K
NJM4558L IC581
R583 10K
R585 10K
R586 10K
R584 10K
R587 10K
R589 10K
R590 10K
R588 10K
C582 10/16
R121 4.7K
R105 10K
R104 3.3K
R103 1/2W
R108 10K
R107 3.3K
R106 1/2W
R111 10K
R110 100K
R109 1/2W
R114 10K
R113 10K
R112 1/2W
TR101 2SA1048 Y, GR
TR102 2SA1048 Y, GR
TR103 2SA1048 Y, GR
TR104 2SA1048 Y, GR
PROTECT
TR61 DTC114TS
R62 47K
R102 1K
C101 1/50
R21
R22 2.2K
R24 270
TR23 2SB621
IC21 7805
D23 1N4002
TR25 2SB621
R31 3.3K
R30 220
TR26 DTC114ES
TR21 2SA1048 Y, GR
R23 4.7K
R25 3.9K
R26 3.9K
R27 3.6V 4.7K
TR24 DTC114ES
D24 1SS131
TR22 DTC114ES
C21 10/50
C22 47/25
D21 1N4002
D25 MTZJ5.6C
D22 1SS131
D47 1SS131
D82 1N4002
C83 220/35
C84 22/50
R82 4.7K
D84 MTZJ33B
R85 47K
C85 22/50
D46 MTZJ15B
D81 1N4002
C82 220/35
R81 4.7K
R83 1K
TR82 2SA1048
R84
R80 1 1/2W
C81 220/35
D83 1N4002
TR81 2SB1375
-VP
MTZJ5.6A
R87 100
D85
R86 100
P13
VF-2
VF-1
GND MAIN
VCC MAIN1
VCC MAIN2
GND SUB
VCC SUB
WA913
R43 0.47 1/2W
R45 3.9K
R46 2.7K
TR44 2SB1375
+12V
R47 220 1/2W
D42 1SS131
R48 220 1/2W
TR41 2SA1048 Y, GR
R101 1K
D44 MTZJ7.5C
1SS131 D41
TR45 2SC2458 Y, GR
D45 MTZJ5.1B
C41 100/35
TR43 DTC114ES
C2A 0.047
C1A 0.047
D1 D5FA20
R1 8.2K 1/4W
R2 8.2K 1/4W
C3 3300/35
C4 3300/35
R63 3.9K 1/2W
R62 3.9K 1/2W
D62 MTZJ6.2A
C62 47/25
D43 MTZJ6.2A
R60 3.9K
R61 3.9K
C61 47/25
R141 150 1/2W
D141 1N4002
TR151 2SC2458 Y, GR
D151
C151 47/50
R151 2.2K 1/4W
C152 100/10
D152 MTZJ7.5C
R152 4.7K
R153 1K
R154 220K
MAIN410 (A) PCB C1047A501A
MAIN410 (B) PCB C1047A501B
P801
L801
402M-KH 250VAC
C801
F1 T2A
P1
P5
P6
C1047-E POWER TRANS
C1047-U POWER TRANS
402M-KH 250AC
F1 T630mA
F2 T630mA
F3 T2.5A
F4 T2.5A
P2 10V
P3 125V
P4 113V
P7
SW801 ESE-37311
W801
WHT
YLW
BRN
BLU
RED
ORG
R4 0.47 (1/2W)
R5 0.47 (1/2W)
C5 0.15
D5 RL152-M11
D6 RL152M11
D7 RL152M11
D8 RL152M11
C8 0.047
C6 3300/25
MAIN410 (C) PCB C1047A501C
MAIN410 (B) PCB C1047A501B

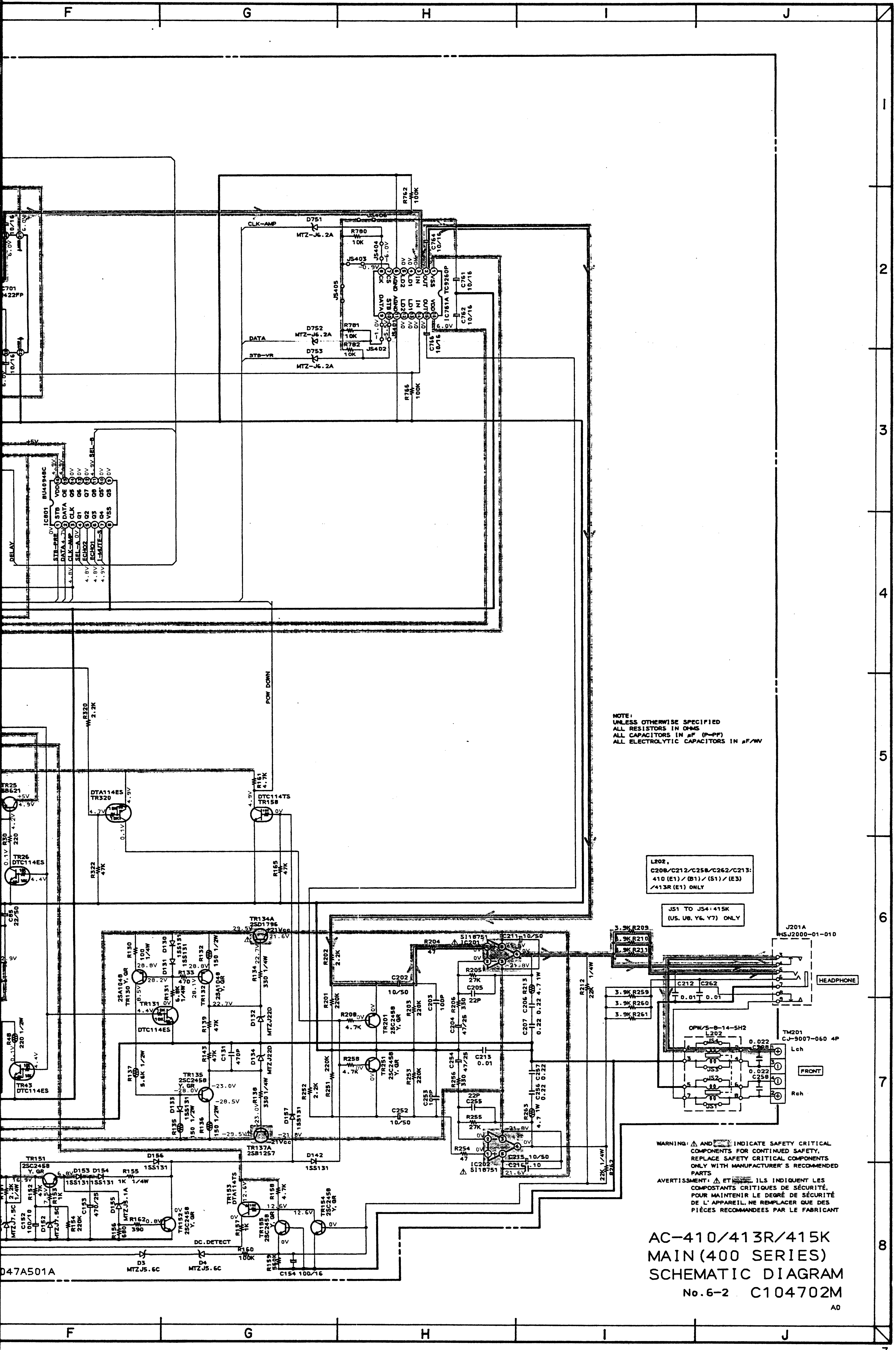
B (POWER SUPPLY) LINE
L-CH MAIN SIGNAL LINE
MIC SIGNAL LINE
MIC ECHO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED WHEN NO SIGNAL WAS BEING INPUT. (FUNCTION: AUX MODE, KARAOKE: OFF)

410 E1
410 B1
410 S1 C1047-E POWER TRANS
413R E1
410 E3

415K U5
415K U8 C1047-U POWER TRANS
415K Y6
415K Y7

	F1	F2	F3	F4
C1047-E	T630mA	—	T2.5A	T2.5A
C1047-U	T630mA	T630mA	T2.5A	T2.5A


F
G
H
I
J
1
2
3
4
5
6
7
8
CLK-AMP
DATA
STB-VR
D751
D752
D753
MTZ-J6.2A
R780 10K
R781 10K
R782 10K
JS401
JS402
JS403
JS404
JS405
JS406
R762 100K
R766 100K
IC761A TC9260P
C761 10/16
C762 10/16
C764 10/16
C716 10/16
IC701
IC801 BU4094BC
STB
DATA
CLK
SEL-A
ECHO2
ECHO1
L-MUTE-S
DELAY
+5V
R320 2.2K
POW DOWN
DTA114ES TR320
DTC114TS TR158
R161 4.7K
R322 47K
R165 47K
TR25 2SB621
TR26 DTC114ES
TR43 DTC114ES
TR134A 2SD1796
TR137A 2SB1257
TR131 DTC114ES
TR130 2SA1048
TR132 2SA1048 Y, GR
TR135 2SC2458 Y, GR
TR151 2SC2458 Y, GR
TR152 2SC2458 Y, GR
TR153 DTA114TS
TR155 2SC2458 Y, GR
TR154 2SC2458 Y, GR
TR201 2SC2458 Y, GR
TR251 2SC2458 Y, GR
IC201 SI18751
IC202 SI18751
R202 2.2K
R204 47
R205 27K
R254 47
R255 27K
C202 10/50
C252 10/50
C211 10/50
C215 10/50
R212 22K 1/4W
R262 22K 1/4W
3.9K R209
3.9K R210
3.9K R211
3.9K R259
3.9K R260
3.9K R261
C212 0.01
C262 0.01
J201A HSJ2000-01-010
HEADPHONE
OPW/S-B-14-5H2
L202
JS1
JS2
JS3
JS4
0.022 C208
0.022 C258
TM201 CJ-9007-060 4P
Lch
Rch
FRONT
DC.DETECT
D3 MTZJ5.6C
D4 MTZJ5.6C
C154 100/16
R160 100K
047A501A
7

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

L202,
C208/C212/C258/C262/C213:
410 (E1)/(B1)/(S1)/(E3)
/413R (E1) ONLY

JS1 TO JS4: 415K
(U5, U8, Y6, Y7) ONLY

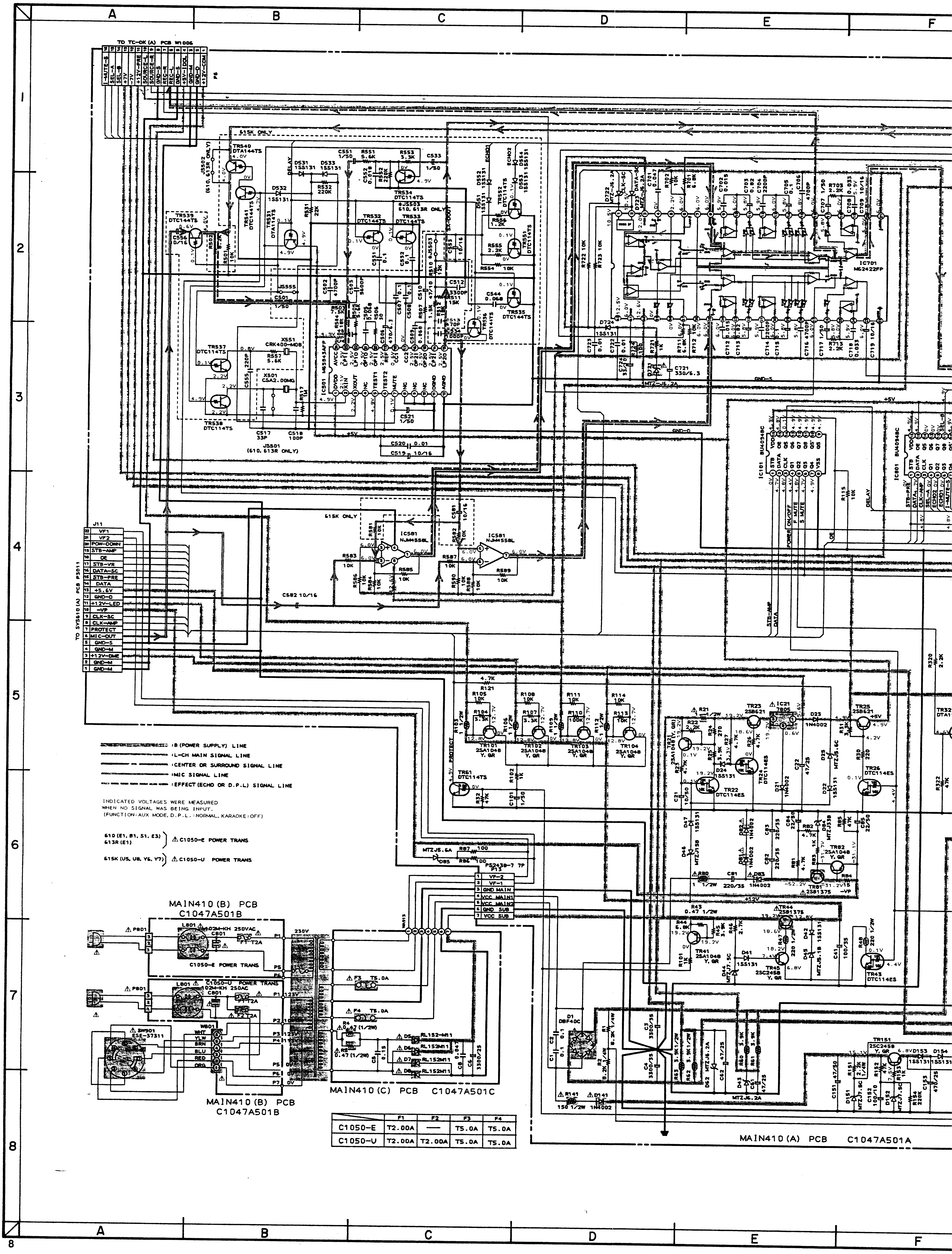
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨. ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

AC-410/413R/415K
MAIN (400 SERIES)
SCHEMATIC DIAGRAM

No.6-2 C104702M

A0


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO TC-DK (A) PCB W1006
P6
1-MUTE-S
SEL-A
SEL-B
+7V
+12V-PRE
SOURCE-L
SOURCE-R
GND-S
REC-R
REC-L
GND-S
+5V-IDOL
GND-M
GND-D
+12V-CD4
J11
TO SVS610(A) PCB P3011
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-SC
STB-PRE
DATA
+5.6V
GND-D
+12V-LED
-VP
CLK-SC
CLK-AMP
PROTECT
MIC-OUT
GND-S
GND-M
+12V-DME
GND-M
GND-M
615K ONLY
IC501 M65843AFP
X551 CRK400-M08
X501 CSA2.00MG
JS501 (610, 613R ONLY)
JS502 (610, 613R ONLY)
IC581 NJM4558L
IC701 M62422FP
IC101 BU4094BC
IC801 BU4094BC
IC21 7805
PS2439-7 7P
P13
VF-2
VF-1
GND MAIN
VCC MAIN1
VCC MAIN2
GND SUB
VCC SUB
MAIN410 (B) PCB
C1047A501B
C1050-E POWER TRANS
C1050-U POWER TRANS
ESE-37311
MAIN410 (C) PCB C1047A501C
MAIN410 (A) PCB C1047A501A
DBF40C

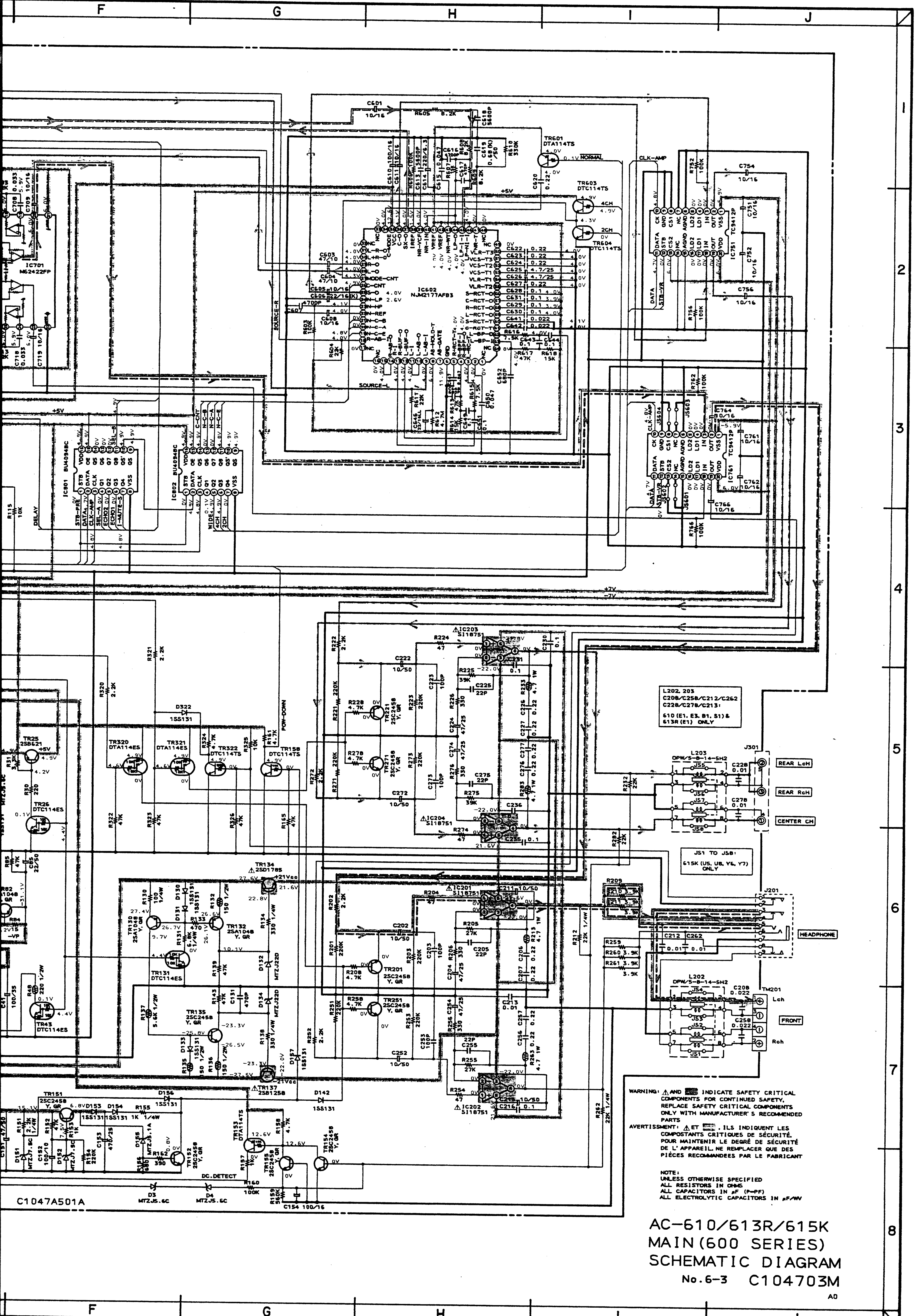
:B (POWER SUPPLY) LINE
:L-CH MAIN SIGNAL LINE
:CENTER OR SURROUND SIGNAL LINE
:MIC SIGNAL LINE
:EFFECT (ECHO OR D.P.L) SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
WHEN NO SIGNAL WAS BEING INPUT.
(FUNCTION: AUX MODE, D.P.L.: NORMAL, KARAOKE: OFF)

610 (E1, B1, S1, E3)
613R (E1) } ⚠ C1050-E POWER TRANS

615K (US, UB, Y6, Y7) } ⚠ C1050-U POWER TRANS

	F1	F2	F3	F4
C1050-E	T2.00A	—	T5.0A	T5.0A
C1050-U	T2.00A	T2.00A	T5.0A	T5.0A


F
G
H
I
J
1
2
3
4
5
6
7
8
IC701 M62422FP
IC602 NJM2177AFB3
TR601 DTA114TS
TR603 DTC114TS
TR604 DTC114TS
CLK-AMP
IC751 TC9412P
IC761 TC9412P
IC801 BU4094BC
IC802 BU4094BC
SOURCE-R
SOURCE-L
+5V
+7V
-7V
IC203 S118751
IC204 S118751
IC201 S118751
IC202 S118751
L202, 203
C208/C258/C212/C262
C228/C278/C213:
610 (E1, E3, B1, S1) &
613R (E1) ONLY
J301
L203
DPW/5-B-14-5H2
REAR LCH
REAR RCH
CENTER CH
JS1 TO JS8:
615K (US, UB, Y6, Y7)
ONLY
J201
HEADPHONE
L202
DPW/5-B-14-5H2
TM201
Lch
FRONT
Rch
TR25 2SB621
TR26 DTC114ES
TR43 DTC114ES
TR320 DTA114ES
TR321 DTA114ES
TR322 DTC114TS
TR158 DTC114TS
POW-DOWN
D322 1SS131
TR134 2SD1785
TR130 2SA1048 Y, GR
TR131 DTC114ES
TR132 2SA1048 Y, GR
TR135 2SC2458 Y, GR
TR137 2SB1258
TR201 2SC2458 Y, GR
TR251 2SC2458 Y, GR
TR221 2SC2458 Y, GR
TR271 2SC2458 Y, GR
+21Vcc
-21Vcc
-VP
TR151 2SC2458 Y, GR
TR152 2SC2458 Y, GR
TR153 DTA114TS
TR154 2SC2458 Y, GR
TR155 2SC2458 Y, GR
DC.DETECT
D3 MTZJ5.6C
D4 MTZJ5.6C
C1047A501A

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨ . ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

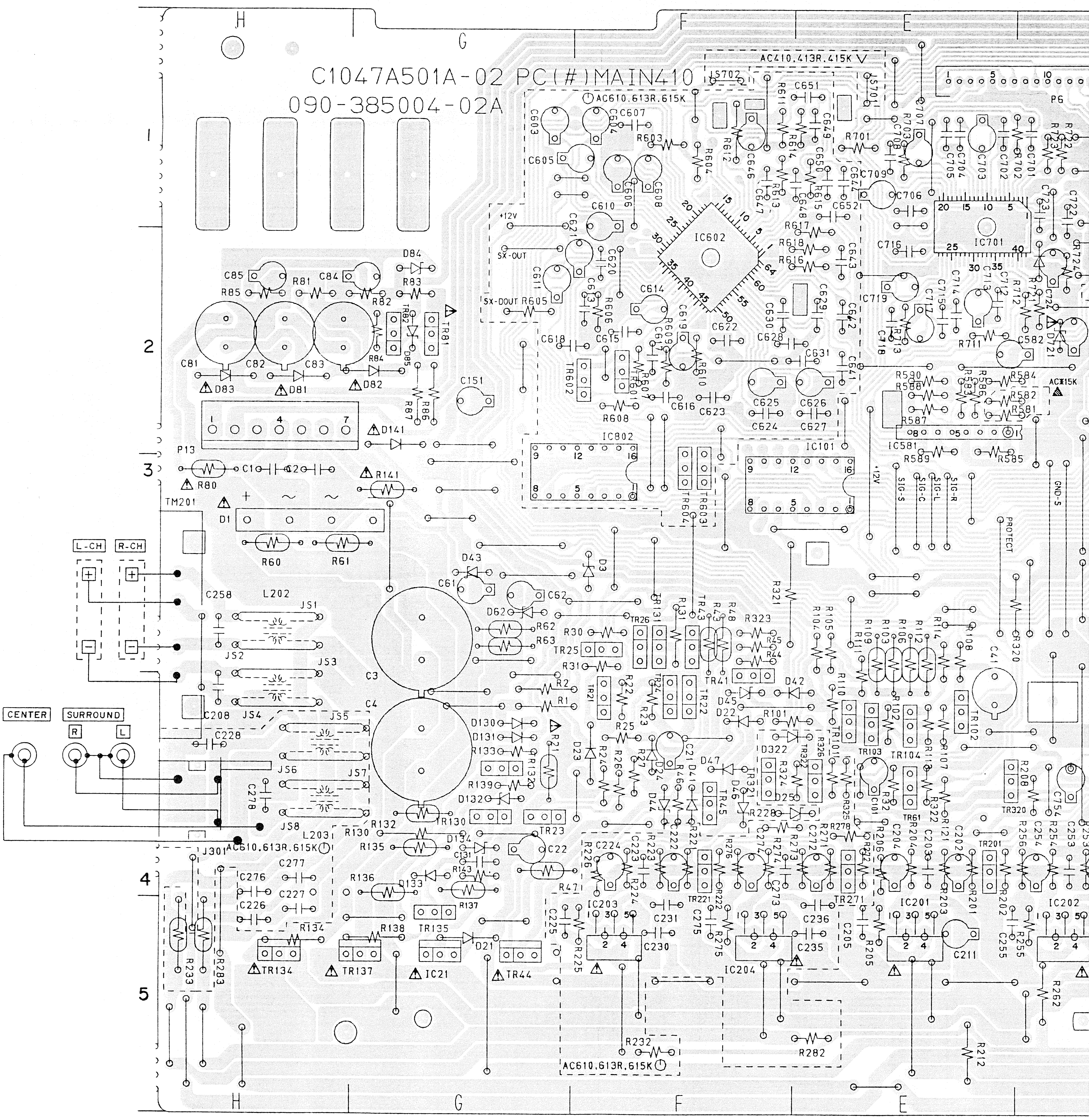
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV

AC-610/613R/615K
MAIN (600 SERIES)
SCHEMATIC DIAGRAM
No.6-3 C104703M

A0

PRINCIPAL PARTS LOCATION

ICs		TRANSISTORs										CONNECTORs	
IC21	G5	TR21	F4	TR102	E4	TR158	C5	TR537	B1			J11	B1
IC101	E,F3	TR22	F4	TR103	E4	TR201	E4	TR538	C1			J201	B3
IC201	E5	TR23	G4	TR104	E4	TR221	F4	TR539	B1			J301	H4
IC202	D5	TR24	F4	TR130	G4	TR251	D4	TR540	B1			P6	D,E
IC203	F5	TR25	F3	TR131	F3	TR271	E4	TR541	B1			P13	H2
IC204	F5	TR26	F3	TR132	G4	TR320	D,E4	TR551	C2				
IC501	C1	TR41	F3,4	TR134	H5	TR321	F4	TR552	C1,2				
IC581	E2	TR43	F3	TR135	G5	TR322	E4	TR601	F2				
IC602	F2	TR44	G5	TR137	G5	TR531	C1	TR603	F3				
IC701	E1,2	TR45	F4	TR151	C4	TR532	D1	TR604	F3				
IC751	D3,4	TR61	E4	TR152	C5	TR533	D1						
IC761	C3,4	TR81	G2	TR153	C,D4	TR534	C2						
IC801	D2	TR82	G2	TR154	D5	TR535	D1,2						
IC802	F,G3	TR101	E4	TR155	D5	TR536	C2						


H
G
F
E
1
2
3
4
5
C1047A501A-02 PC(#)MAIN410
090-385004-02A
AC410.413R.415K
AC610.613R.615K
IC602
IC701
IC802
IC101
IC581
IC203
IC204
IC201
IC202
IC21
P6
P13
TM201
J301
L-CH
R-CH
CENTER
SURROUND
R
L
C3
C4
D1
+12V
SX-OUT
5X-DOUT
PROTECT
GND-S
SIG-S
SIG-C
SIG-L
SIG-R
TR134
TR137
TR44

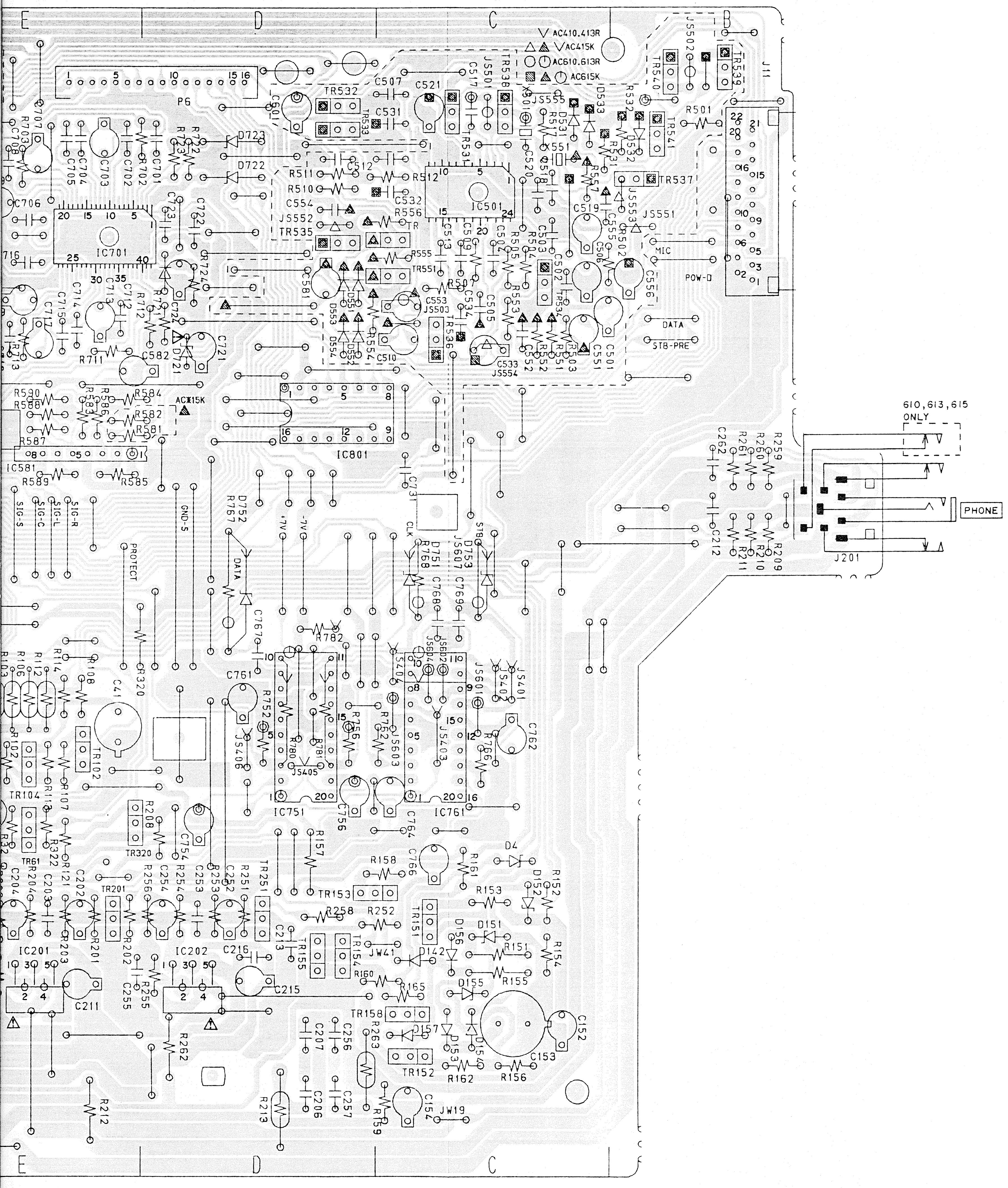
MAIN410(A) PCB C1047A501A

NOTE

.... B1
.... C1
.... B1
.... B1
.... B1
.... C2
.... C1,2
.... F2
.... F3
.... F3

CONNECTORs

J11	B1
J201	B3
J301	H4
P6	D,E1
P13	H2



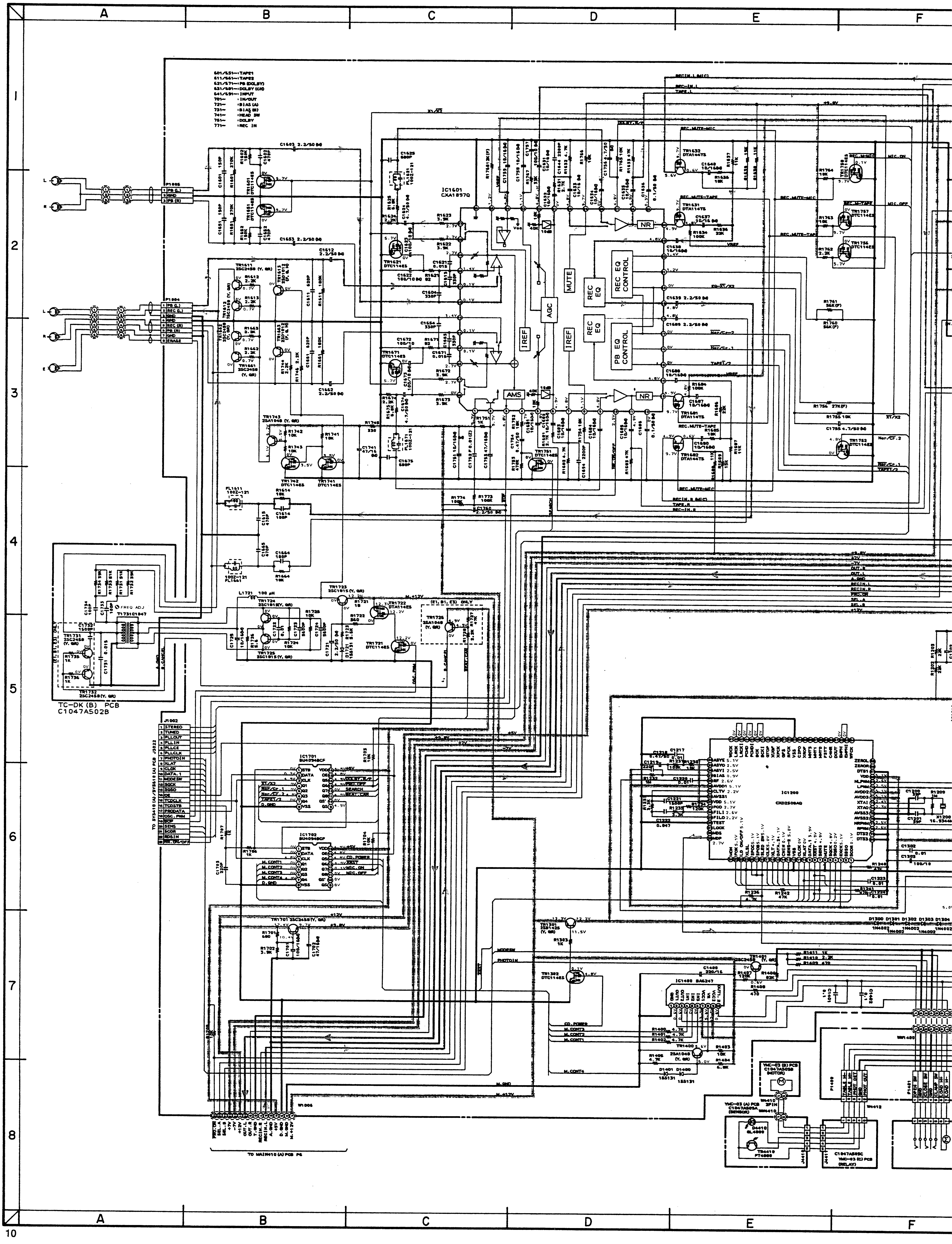
E
D
C
B
AC410.413R
AC415K
AC610.613R
AC615K
P6
J11
IC701
IC501
IC801
IC751
IC761
IC201
IC202
ACX15K
610,613,615
ONLY
PHONE
J201
MIC
POW-D
DATA
STB-PRE
SIG-S
SIG-C
SIG-L
SIG-R
GND-S
PROTECT
+7V
-7V
CLK
STB

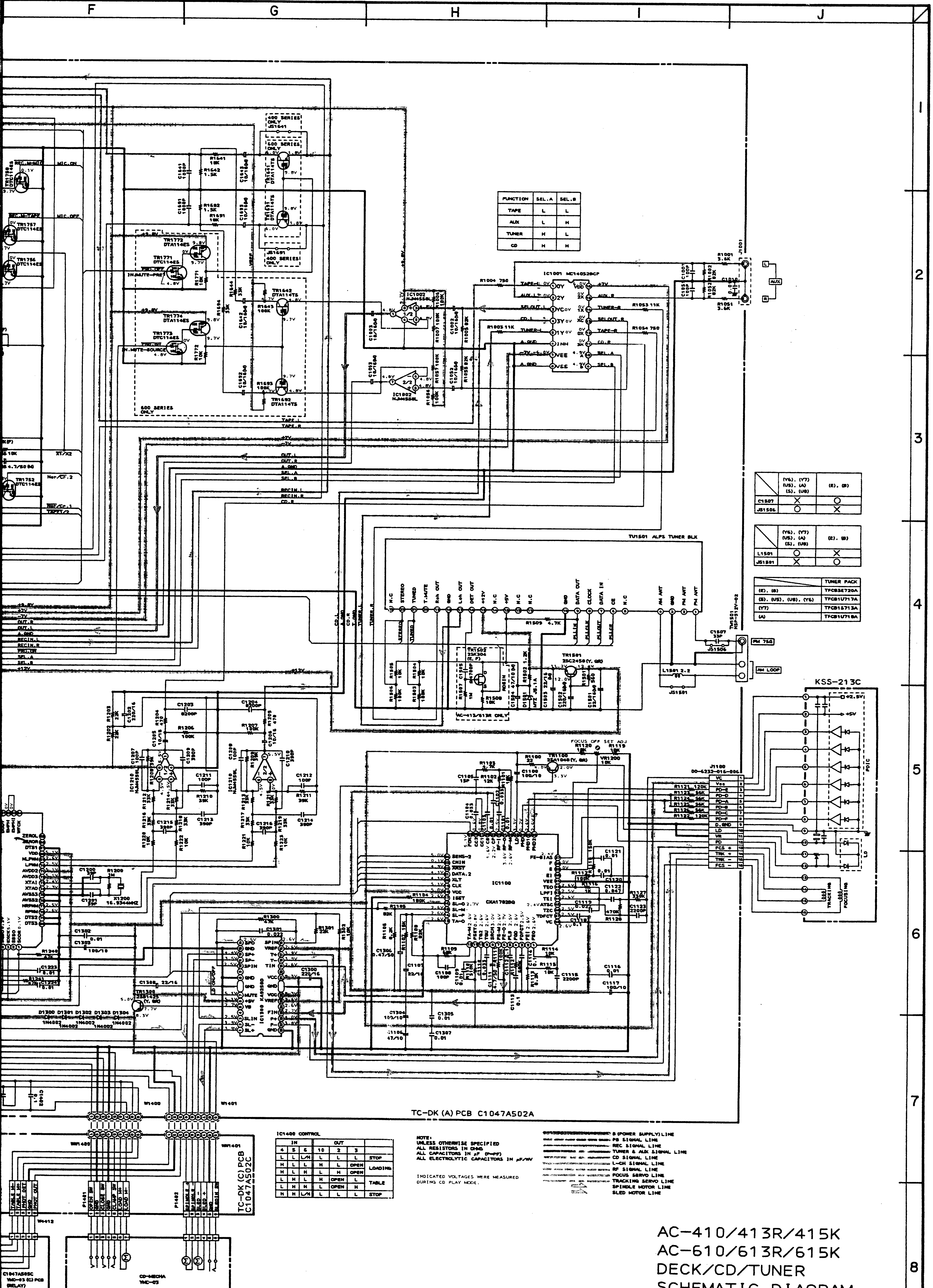
IA

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


A
B
C
D
E
F
1
2
3
4
5
6
7
8
601/651~ : TAPE1
611/661~ : TAPE2
621/671~ : PB (DOLBY)
631/681~ : DOLBY (CH)
641/691~ : INPUT
701~ : IN/OUT
721~ : BIAS (A)
731~ : BIAS (B)
741~ : HEAD SW
751~ : DOLBY
771~ : REC IN
IC1601
CXA1897Q
MUTE
AGC
IREF
REC EQ
REC EQ CONTROL
PB EQ CONTROL
NR
AMS
P1005
P1004
TC-DK (B) PCB
C1047A502B
J1002
TO 3Y3410 (A)/3Y3510 (A) PCB J3022
IC1701
BU4094BCF
IC1702
BU4094BCF
IC1200
CXD2508AQ
IC1400 BA6247
TO MAIN410 (A) PCB P6
W1006
YMC-03 (B) PCB
C1047A505B
(MOTOR)
YMC-03 (A) PCB
C1047A505A
(SENSOR)
C1047A505C
YMC-03 (C) PCB
(RELAY)
T1731C1847
FREQ ADJ
(E1, B1, E3) ONLY


F
G
H
I
J
1
2
3
4
5
6
7
8
IC1001 MC14052BCP
IC1002 NJM4558L
TR1641 DTA114TS
TR1642 DTA114TS
TR1691 DTA114TS
TR1692 DTA114TS
TR1771 DTC114ES
TR1772 DTA114ES
TR1773 DTC114ES
TR1774 DTA114ES
400 SERIES ONLY
600 SERIES ONLY
J1001
AUX
TU1501 ALPS TUNER BLK
TM1501 HSP-312V-02
FM 75Ω
AM LOOP
TR1505 2SK304 (E, F)
TR1501 2SC2458 (Y, GR)
AC-413/613R ONLY
KSS-213C
PDIC
LD
TRACKING
FOCUSING
J1100
FOCUS OFF SET ADJ
TR1100 2SA1048 (Y, GR)
IC1100 CXA1782BQ
IC1300 KA9258D
TR1300 2SB1425 (Y, GR)
D1300 D1301 D1302 D1303 D1304
IC1200 NJM4558L
IC1210 NJM4558L
X1200 16.9344MHZ
W1400
W1401
WH1400
WH1401
WH1412
P1401
P1402
TC-DK (C) PCB C1047A502C
C1047A505C YMC-03 (C) PCB (RELAY)
CD-MECHA YMC-03

FUNCTION	SEL.A	SEL.B
TAPE	L	L
AUX	L	H
TUNER	H	L
CD	H	H

	(Y6), (Y7) (U5), (A) (S), (U8)	(E), (B)
C1507	☒	○
JS1506	○	☒

	(Y6), (Y7) (U5), (A) (S), (U8)	(E), (B)
L1501	○	☒
JS1501	☒	○

	TUNER PACK
(E), (B)	TFCB3E720A
(S), (U5), (U8), (Y6)	TFCB1U717A
(Y7)	TFCB15713A
(A)	TFCB1U718A

TC-DK (A) PCB C1047A502A

IC1400 CONTROL

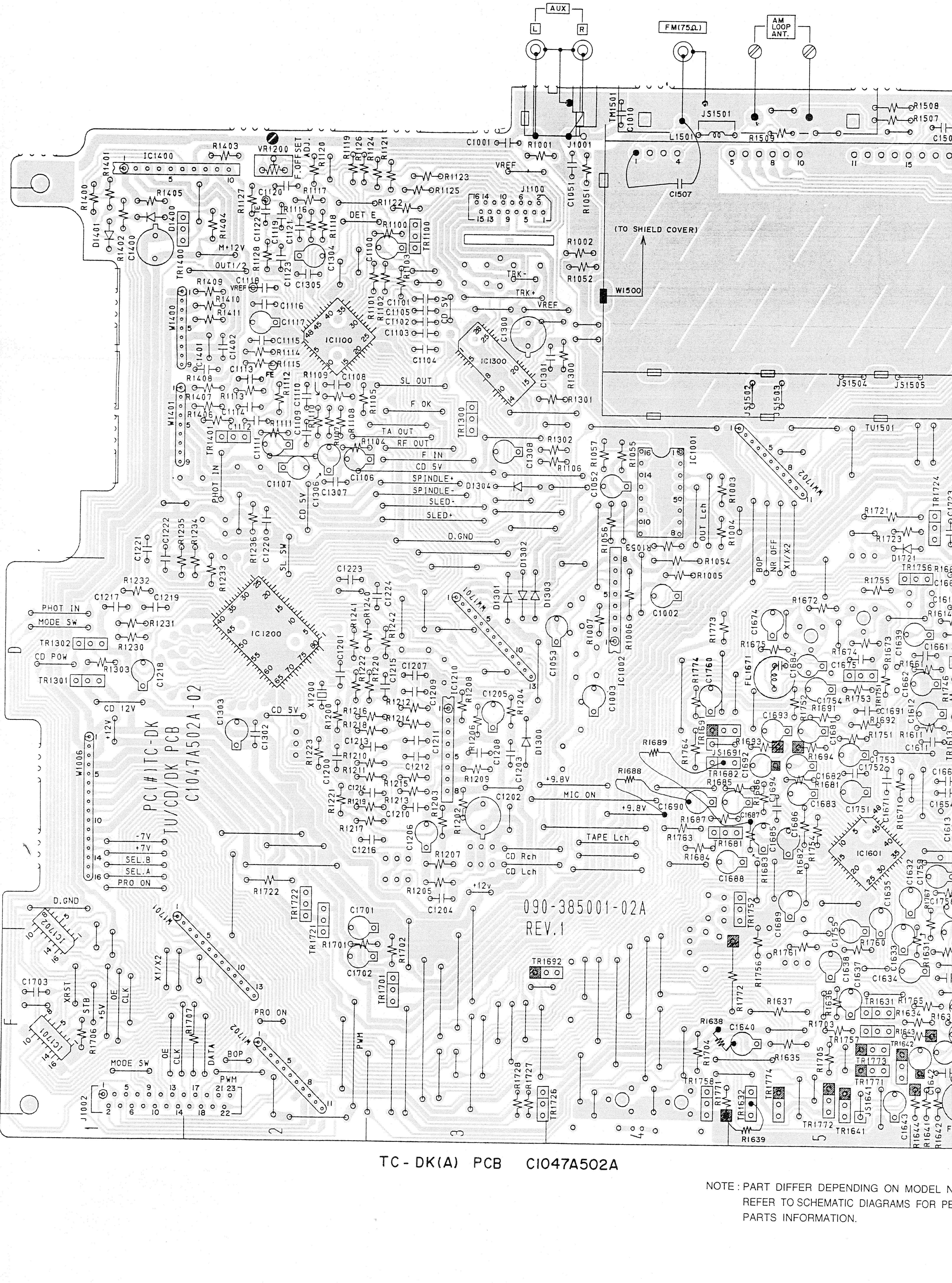
IN			OUT			
4	5	6	10	2	3	
L	L	L/H	L	L	L	STOP
H	L	L	H	L	OPEN	LOADING
H	L	H	L	H	OPEN	
L	H	L	H	OPEN	L	TABLE
L	H	H	L	OPEN	H	
H	H	L/H	L	L	L	STOP

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

INDICATED VOLTAGES WERE MEASURED DURING CD PLAY MODE.

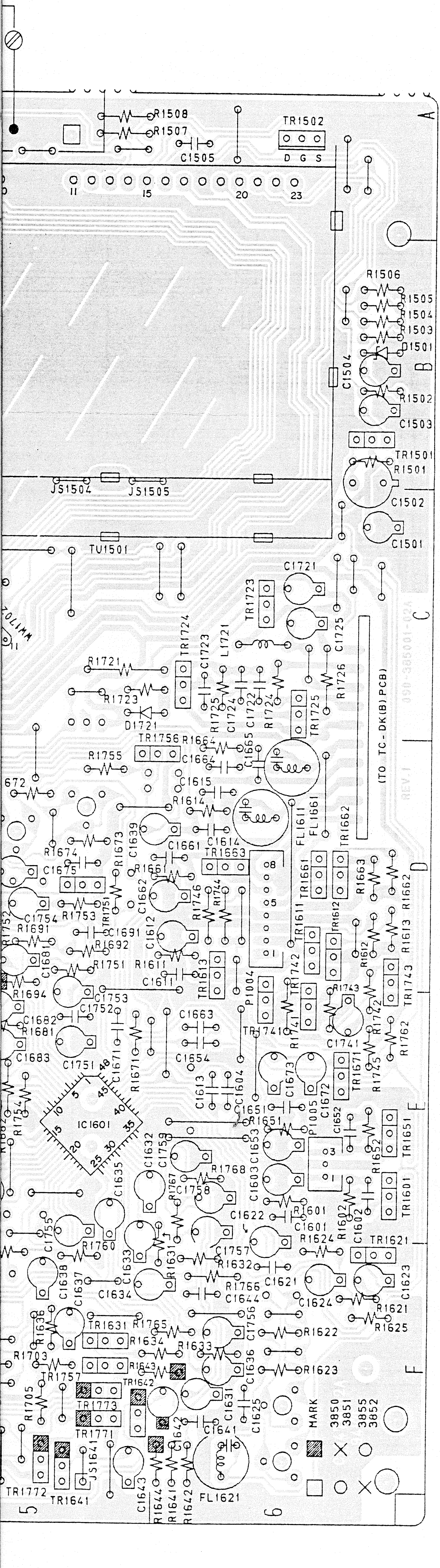
B (POWER SUPPLY) LINE
PB SIGNAL LINE
REC SIGNAL LINE
TUNER & AUX SIGNAL LINE
CD SIGNAL LINE
L-CH SIGNAL LINE
RF SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE
SPINDLE MOTOR LINE
SLED MOTOR LINE

AC-410/413R/415K
AC-610/613R/615K
DECK/CD/TUNER
SCHEMATIC DIAGRAM
No.6-4 C104704M
A0


AUX
L
R
FM(75Ω)
AM LOOP ANT.
(TO SHIELD COVER)
VR1200
F.OFF SET ADJ.
IC1400
IC1100
IC1300
IC1200
IC1001
IC1002
IC1210
IC1601
IC1701
IC1702
J1001
J1100
J1002
JS1501
JS1502
JS1503
JS1504
JS1505
JS1691
TU1501
TM1501
W1500
W1400
W1401
W1006
W1101
W1102
W1701
W1702
L1501
FL1671
X1200
DET E
TRK-
TRK+
VREF
M+12V
OUT1/2
SL OUT
F OK
TA OUT
RF OUT
F IN
CD 5V
SPINDLE+
SPINDLE-
SLED-
SLED+
D.GND
PHOT IN
MODE SW
CD POW
CD 12V
+12V
SL SW
OUT Lch
BOP
NR OFF
X1/X2
+9.8V
MIC ON
TAPE Lch
CD Rch
CD Lch
-7V
+7V
SEL.B
SEL.A
PRO ON
XRST
STB
+5V
OE
CLK
DATA
PWM
PC(#)TC-DK
TU/CD/DK PCB
C1047A502A-02
090-385001-02A
REV.1
D
F
1
2
3
4
5

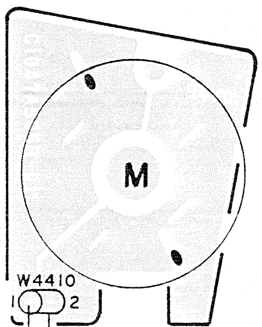
TC-DK(A) PCB C1047A502A

NOTE : PART DIFFER DEPENDING ON MODEL N
REFER TO SCHEMATIC DIAGRAMS FOR PE
PARTS INFORMATION.

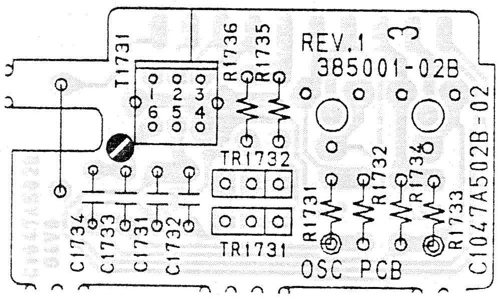

A
B
C
D
E
F
5
6
TR1502
D G S
R1508
R1507
C1505
11
15
20
23
R1506
R1505
R1504
R1503
D1501
C1504
R1502
C1503
TR1501
R1501
C1502
C1501
JS1504
JS1505
TU1501
C1721
TR1723
TR1724
C1723
L1721
C1725
R1721
R1723
D1721
R1725
C1724
C1722
R1724
R1726
TR1725
TR1756
R1666
C1665
C1664
R1755
(TO TC-DK(B) PCB)
REV.1
C1615
R1614
C1661
C1614
TR1663
FL1611
FL1661
TR1662
R1674
C1675
R1673
C1639
R1661
C1662
R1746
R1744
TR1661
TR1612
TR1611
R1663
R1662
R1613
C1754
R1753
TR1751
R1691
C1691
R1692
C1612
R1751
R1611
C1611
TR1613
P1004
TR1742
R1612
TR1743
R1694
C1753
C1752
C1663
R1743
C1682
R1681
TR1741
R1741
R1742
R1762
C1683
C1751
R1671
C1654
C1741
TR1671
R1745
C1613
C1604
C1673
C1672
R1754
IC1601
C1651
R1651
P1005
C1652
TR1651
C1632
C1759
R1768
C1603
C1653
R1652
C1635
R1767
C1758
C1622
R1601
C1601
C1602
TR1601
C1755
R1760
C1633
R1631
C1757
R1624
R1602
TR1621
R1632
C1638
C1637
C1634
R1766
C1621
C1644
C1624
C1623
R1636
R1621
R1625
TR1631
R1765
R1634
C1756
R1622
R1703
R1633
C1636
R1757
R1643
R1623
R1705
TR1773
TR1642
C1631
C1625
MARK
3850
3851
3855
3852
TR1771
JS1641
C1642
C1641
TR1772
TR1641
C1643
R1644
R1641
R1642
FL1621

PRINCIPAL PARTS LOCATION

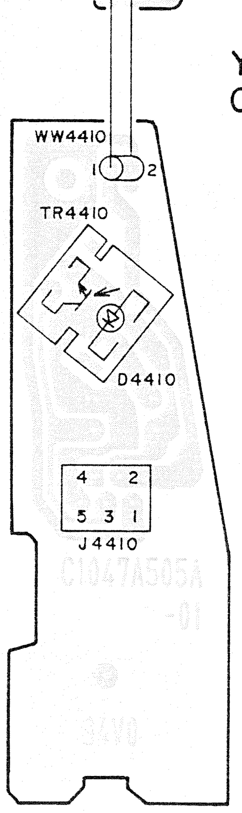
ICs	
IC1001	C4
IC1002	C,D4
IC1100	B2
IC1200	D2
IC1210	D,E3
IC1300	B,C3
IC1400	A1,2
IC1601	E5
IC1701	F1
IC1702	F1
TRANSISTORs	
TR1100	B3
TR1300	C3
TR1301	D1
TR1302	D1
TR1400	B1
TR1401	C2
TR1501	B6
TR1502	A6
TR1601	E6
TR1611	D6
TR1612	D6
TR1613	D6
TR1621	F6
TR1631	F5
TR1632	F5
TR1641	F5
TR1651	E6
TR1661	D6
TR1662	D6
TR1663	D6
TR1671	E6
TR1681	E4
TR1682	E4
TR1691	D4
TR1692	F3,4
TR1701	F3
TR1721	E,F2
TR1722	E2
TR1723	C6
TR1724	C6
TR1725	C6
TR1726	F3
TR1741	D6
TR1742	D6
TR1743	D6
TR1751	D5
TR1752	E5
TR1756	D5,6
TR1757	F5
TR1758	F4
TR1771	F5
TR1772	F5
TR1773	F5
TR1774	F5
CONNECTORs	
J1002	F1,2
J1100	B3
P1004	D6
P1005	E6
WIREs	
W1006	E1
W1400	B1
W1401	C1



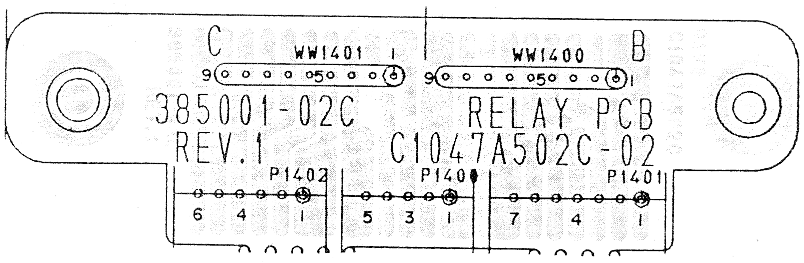
YMC03(B) PCB
C1047A505B


T1731
R1736
R1735
REV.1
385001-02B
6
5
4
3
2
1
TR1732
C1734
C1733
C1731
C1732
TR1731
R1731
R1732
R1734
R1733
OSC PCB
C1047A502B-02

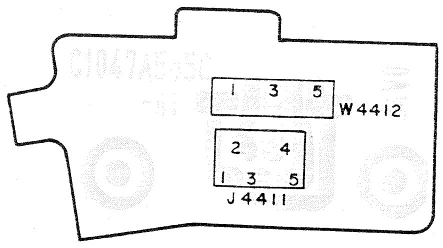
TC-DK(B) PCB C1047A502B


WW4410
1
2
TR4410
D4410
4
2
5
3
1
J4410
C1047A505A
-01

YMC03(A) PCB
C1047A505A

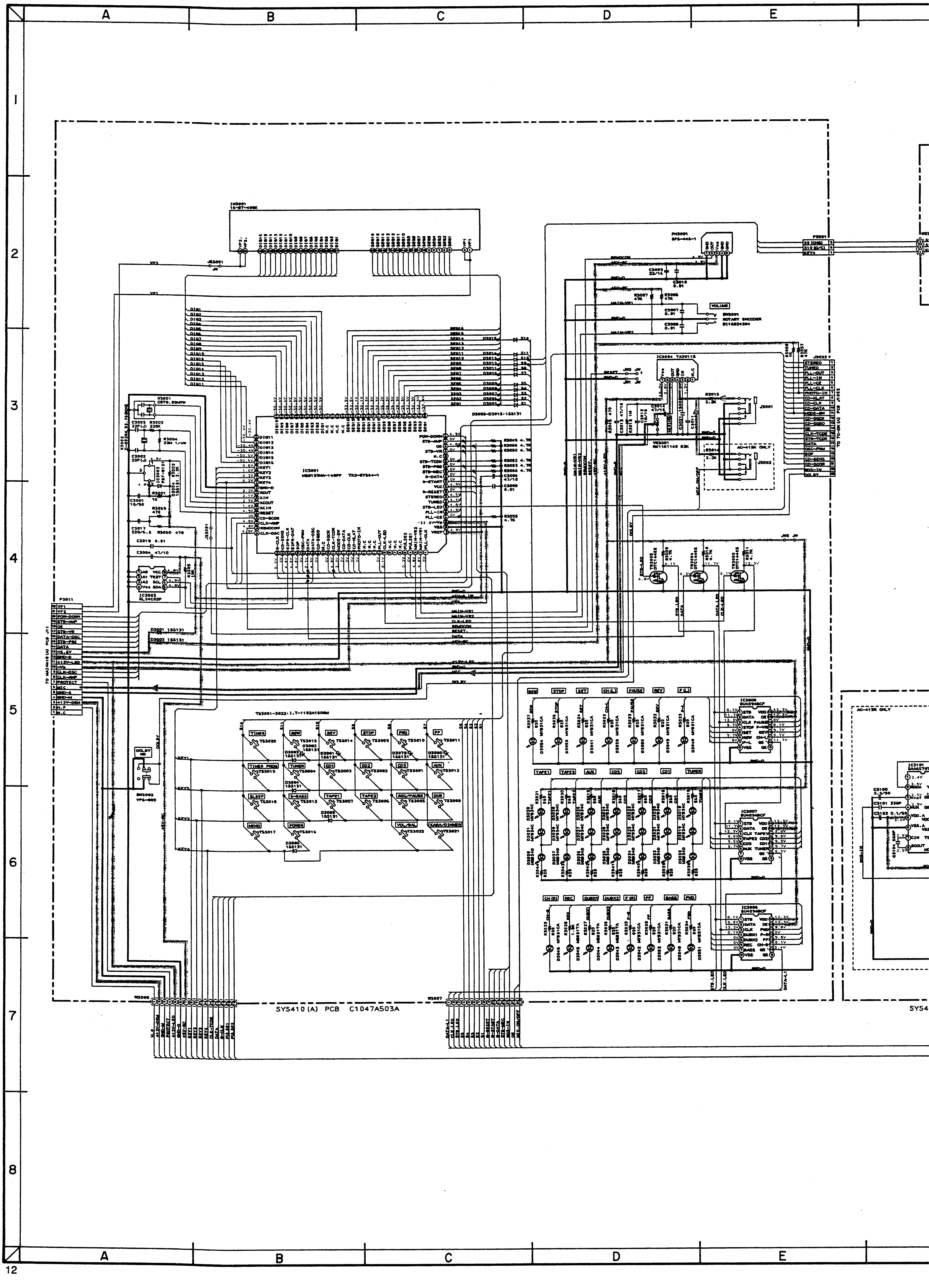

C
B
WW1401
WW1400
9
5
1
385001-02C
REV.1
RELAY PCB
C1047A502C-02
P1402
P1400
P1401
6
4
1
5
3
1
7
4
1

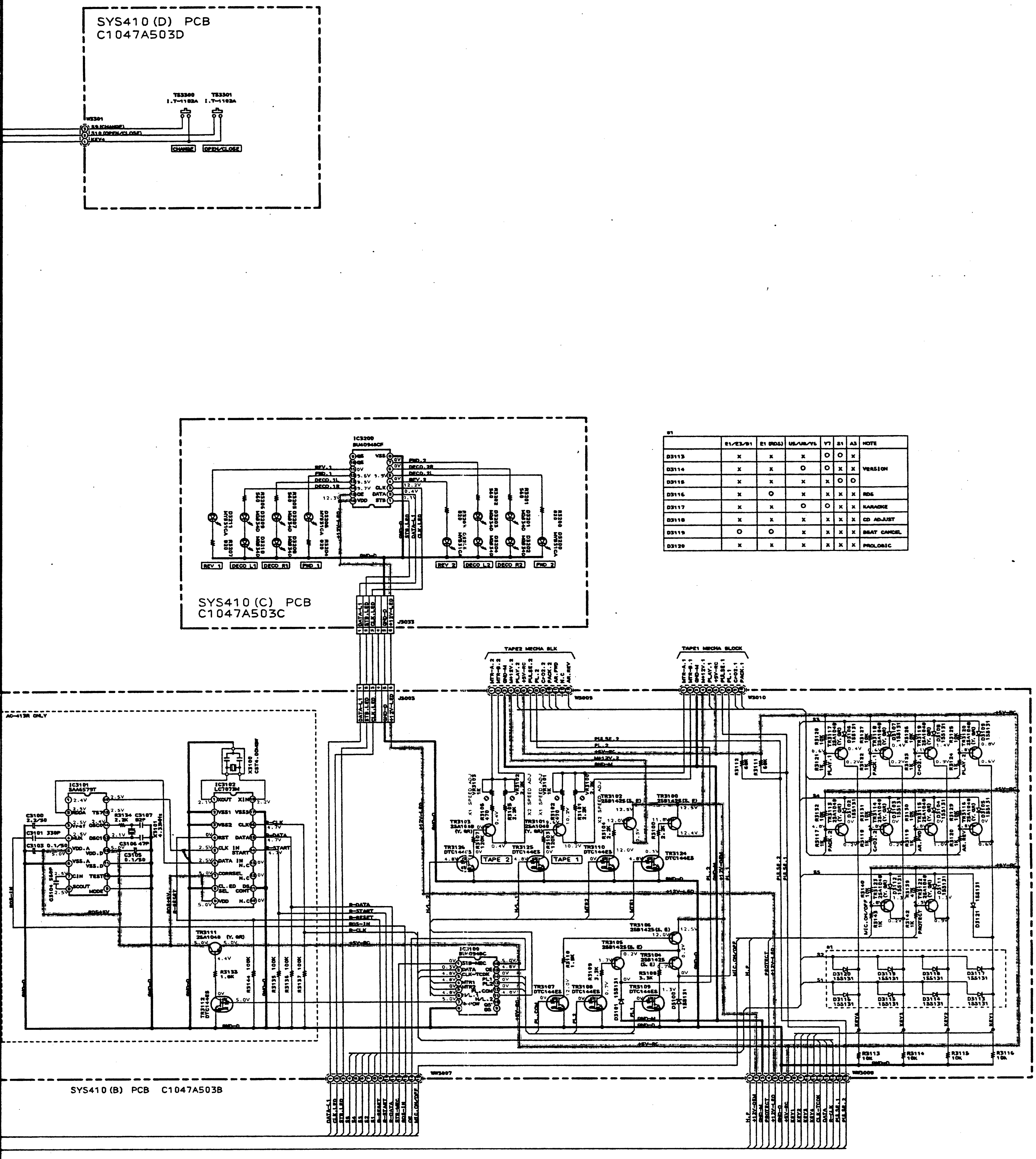
TC-DK(C) PCB C1047A502C


1
3
5
W4412
2
4
1
3
5
J4411

YMC03(C) PCB
C1047A505C

ER DEPENDING ON MODEL NUMBER.
SCHEMATIC DIAGRAMS FOR PERTINENT
ORMATION.


A
B
C
D
E
1
2
3
4
5
6
7
8
IN3001
16-BT-40GK
VF2
VF1
JS3001
JW
DIG1
DIG2
DIG3
DIG4
DIG5
DIG6
DIG7
DIG8
DIG9
DIG10
DIG11
DIG12
DIG13
DIG14
DIG15
DIG16
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
SEG8
SEG9
SEG10
SEG11
SEG12
SEG13
SEG14
SEG15
SEG16
D3005-D3015:1SS131
X3001
CSTS.00MTW
IC3001
MSM5754A-148FP TX2-SY344-1
IC3003
XL24C02P
P3011
TO MAIN410(A) PCB J11
VF1
VF2
POW-DOWN
STB-AMP
OE
STB-VR
DATA-OSC
STB-PRE
DATA
+5.6V
GND-D
+12V-LED
CLK-OSC
CLK-AMP
PROTECT
MIC
GND-S
GND-M
H.P
N.C
D3001 1SS131
D3002 1SS131
DOLBY NR
SW3002
VPS-000
PH3001
SPS-445-1
C3009 22/16
C3010 0.01
R3007 47K
R3006 47K
VOLUME
SW3001
ROTARY ENCODER
EC16B24304
C3007 0.01
C3008 0.01
IC3004 TA2011S
VR3001
RK11K1140 B2K
J3001
AC-415K ONLY
J3002
J3022
TO TC-DK(A) PCB J1002
STEREO
TUNED
PLL-OUT
PLL-IN
PLL-CE
PLL-CLK
PHOTO-IN
CD-XLAT
CD-CLK
CD-DATA
MODE-SW
CD-SQCK
CD-SUBQ
OE
CLK-TCDK
STB-TCDK
DATA
OSC-PRM
EOP
CD-SENS
CD-SCOR
SDA-IN
DOLBY
P3001
S9 (CHG)
S10 (D/C)
KEY4
TS3001-3022: I.T-1102A150BM
TIMER
TS3020
REW
TS3015
REV
TS3014
STOP
TS3009
FWD
TS3010
FF
TS3011
TIMER PROG
TS3019
TUNER
TS3004
CD1
TS3003
CD2
TS3002
CD3
TS3001
AUX
TS3012
SLEEP
TS3018
S-BASS
TS3013
TAPE1
TS3007
TAPE2
TS3006
REC/PAUSE
TS3005
DUB
TS3008
MEMO
TS3017
POWER
TS3016
VOL/BAL
TS3022
KARA/DIMMER
TS3021
D3085
1SS131
D3086
1SS131
KEY1
KEY2
KEY3
KEY4
IC3005
BU4094BCF
IC3007
BU4094BCF
IC3006
BU4094BCF
REW
STOP
SET
CH E.J
PAUSE
REV
F.E.J
TAPE1
TAPE2
AUX
CD3
CD2
CD1
TUNER
CH (R)
REC
DUBX1
DUBX2
F (R)
FF
BASS
FWD
W3006
W3007
SYS410 (A) PCB C1047A503A
AC-413R ONLY
IC3101
SYS4


F
G
H
I
J
1
2
3
4
5
6
7
8
SYS410 (D) PCB
C1047A503D
TS3300
TS3301
CHANGE
OPEN/CLOSE
SYS410 (C) PCB
C1047A503C
IC3200
REV 1
DECO L1
DECO R1
PHD 1
REV 2
DECO L2
DECO R2
PHD 2
TAPE2 MECHA BLK
TAPE1 MECHA BLOCK
AC-413R ONLY
IC3101
IC3102
IC3100
TAPE 2
TAPE 1
SYS410 (B) PCB C1047A503B

S1

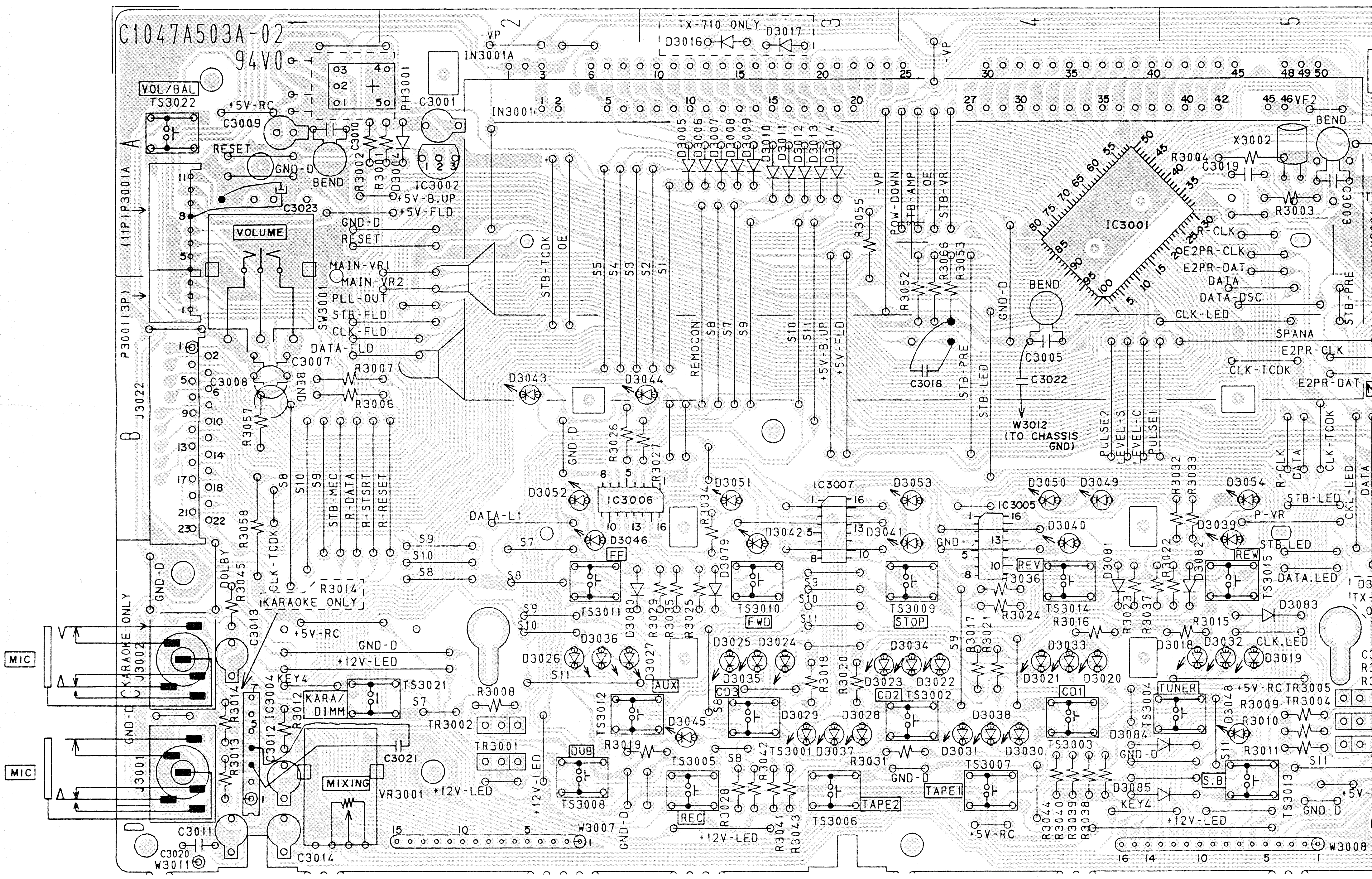
	E1/E3/B1	E1 (RDS)	US/UR/Y6	V7	S1	A3	NOTE
D3113	x	x	x	O	O	x	VERSION
D3114	x	x	O	O	x	x	
D3115	x	x	x	x	O	O	
D3116	x	O	x	x	x	x	RDS
D3117	x	x	O	O	x	x	KARAOKE
D3118	x	x	x	x	x	x	CD ADJUST
D3119	O	O	x	x	x	x	BEAT CANCEL
D3120	x	x	x	x	x	x	PROLOGIC

B (POWER SUPPLY) LINE

MIC SIGNAL LINE

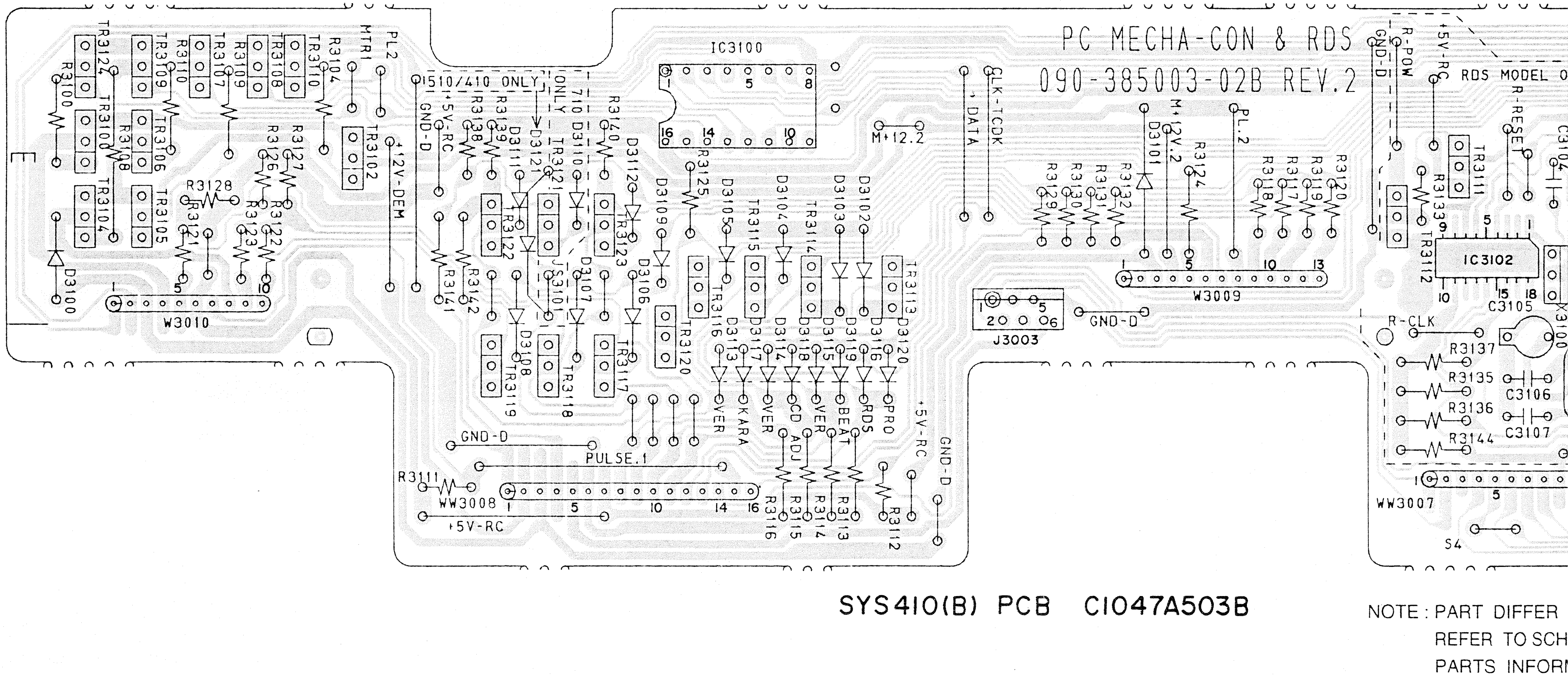
INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE USED:NORMAL TYPE
DOLBY SW:OFF)
(FUNCTION:TAPE-1)

AC-410/413R/415K
SYSCON (400 SERIES)
SCHEMATIC DIAGRAM
No.6-5 C104705M
A0


C1047A503A-02
94V0
VOL/BAL
TS3022
VOLUME
MIC
MIC
KARAOKE ONLY
KARA/DIMM
MIXING
IC3001
IC3002
IC3004
IC3005
IC3006
IC3007
IN3001A
IN3001
TX-710 ONLY
FF
FWD
STOP
REV
REW
AUX
CD3
CD2
CD1
TUNER
DUB
REC
TAPE1
TAPE2
S.B
W3007
W3008
W3012 (TO CHASSIS GND)

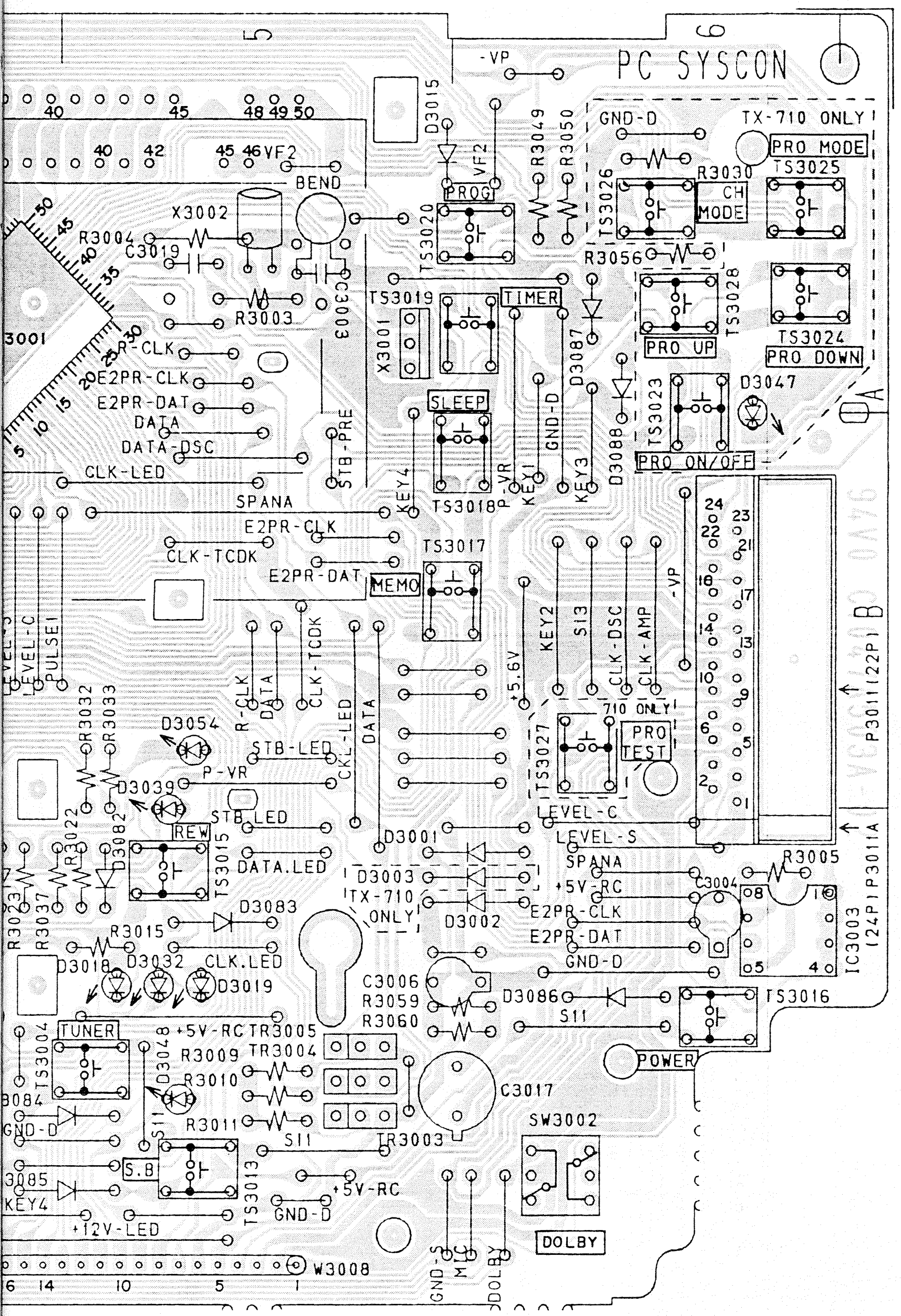
SYS410(A) PCB C1047A503A

NOTE : PART DIFFER DEPENDI
REFER TO SCHEMATIC D
PARTS INFORMATION.

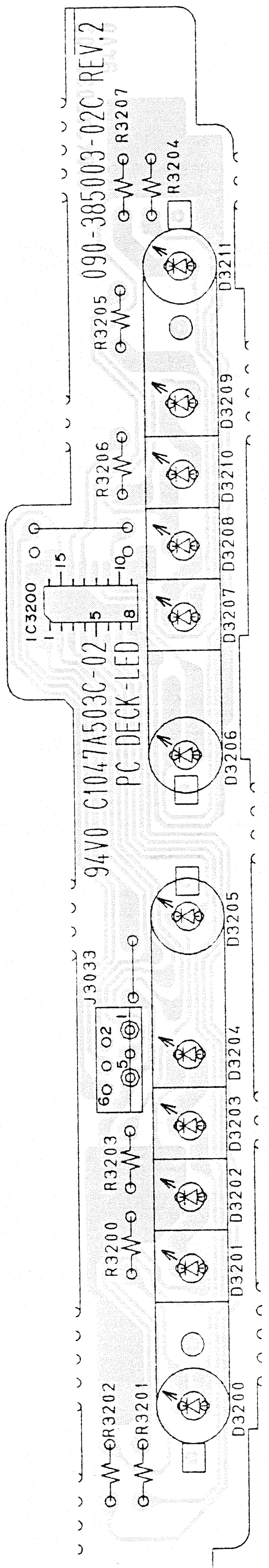

PC MECHA-CON & RDS
090-385003-02B REV.2
IC3100
IC3102
W3009
W3010
J3003
WW3007
WW3008
RDS MODEL O
510/410 ONLY
710 ONLY

SYS410(B) PCB C1047A503B

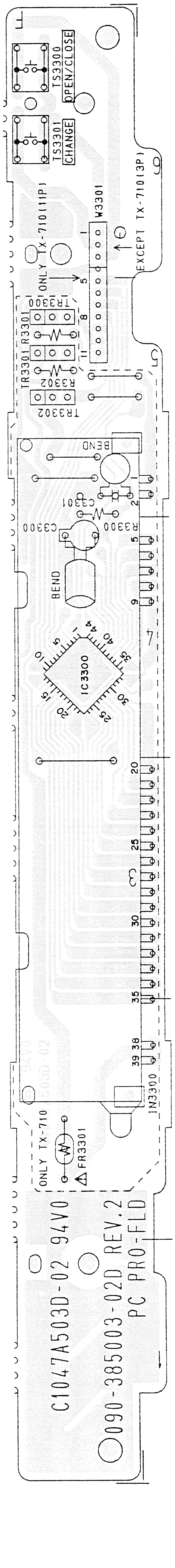
NOTE : PART DIFFER
REFER TO SCH
PARTS INFORM


PC SYSCON
TX-710 ONLY
PRO MODE
CH MODE
TIMER
PRO UP
PRO DOWN
PRO ON/OFF
SLEEP
MEMO
PRO TEST
REW
TUNER
POWER
DOLBY
S.B
P3011(22P)
P3011A
IC3003 (24P)
W3008

NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


090-385003-02C REV.2
94V0 C1047A503C-02
PC DECK-LED
IC3200

SYS410(C) PCB C1047A503C

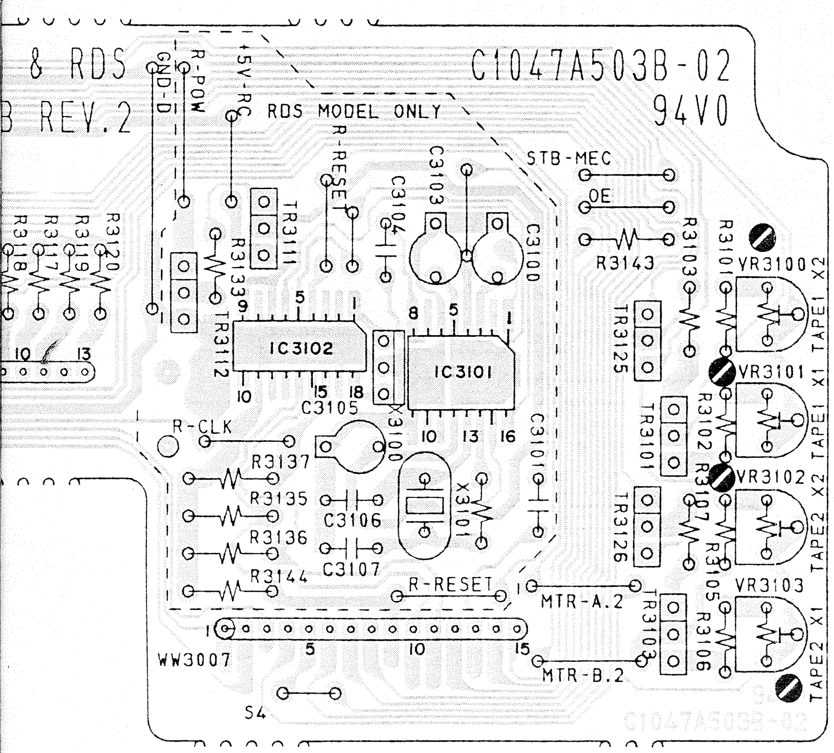

TS3300 OPEN/CLOSE
TS3301 CHANGE
ONLY TX-710(11P)
EXCEPT TX-710(3P)
W3301
BEND
IC3300
ONLY TX-710
FR3301
C1047A503D-02 94V0
090-385003-02D REV.2
PC PRO-FLD

SYS410(D) PCB C1047A503D

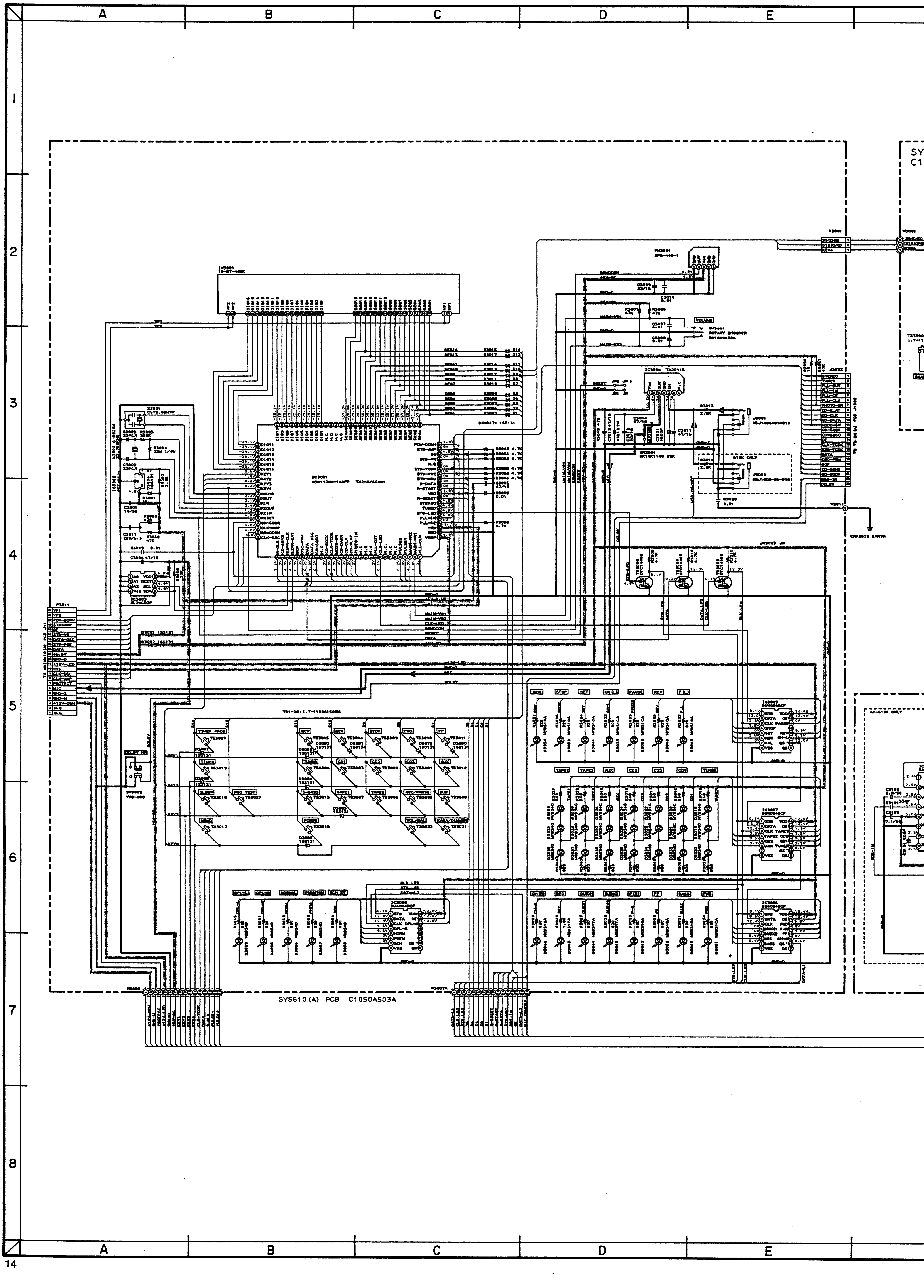
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

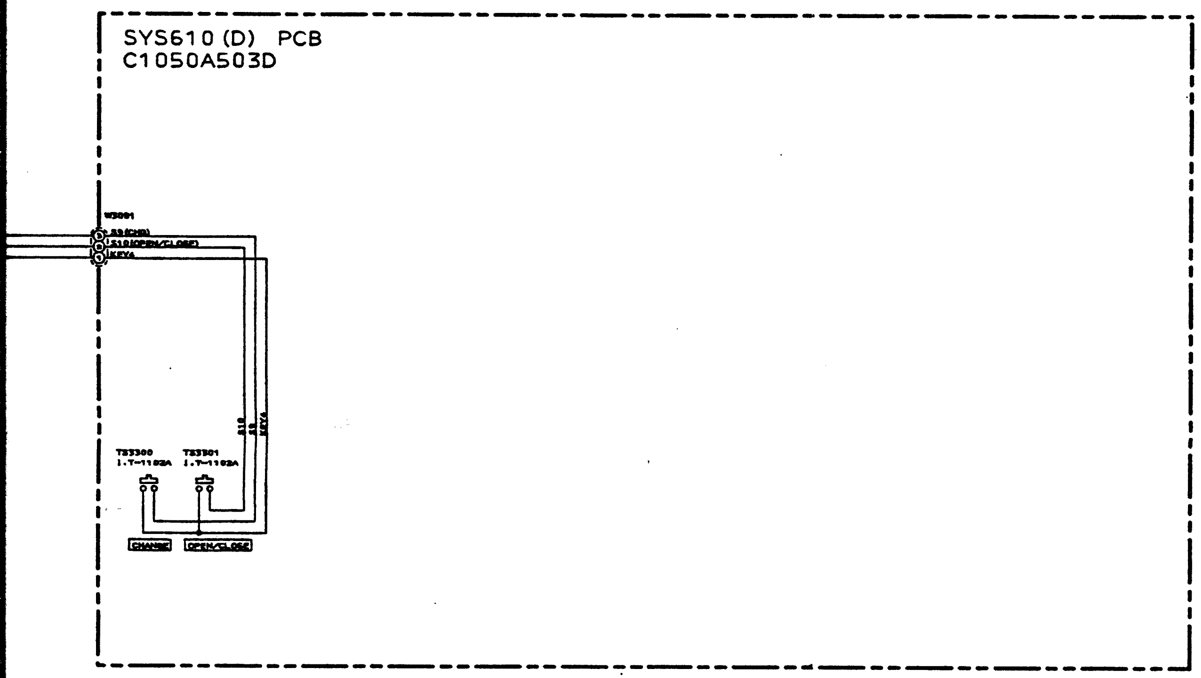
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

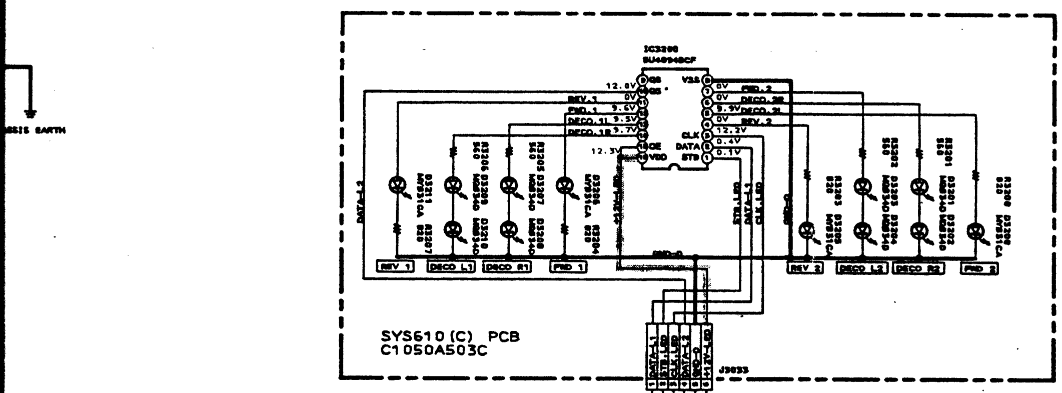
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIECES RECOMMANDEES PAR LE FABRICANT


& RDS
B REV.2
C1047A503B-02
94V0
RDS MODEL ONLY
IC3102
IC3101
WW3007

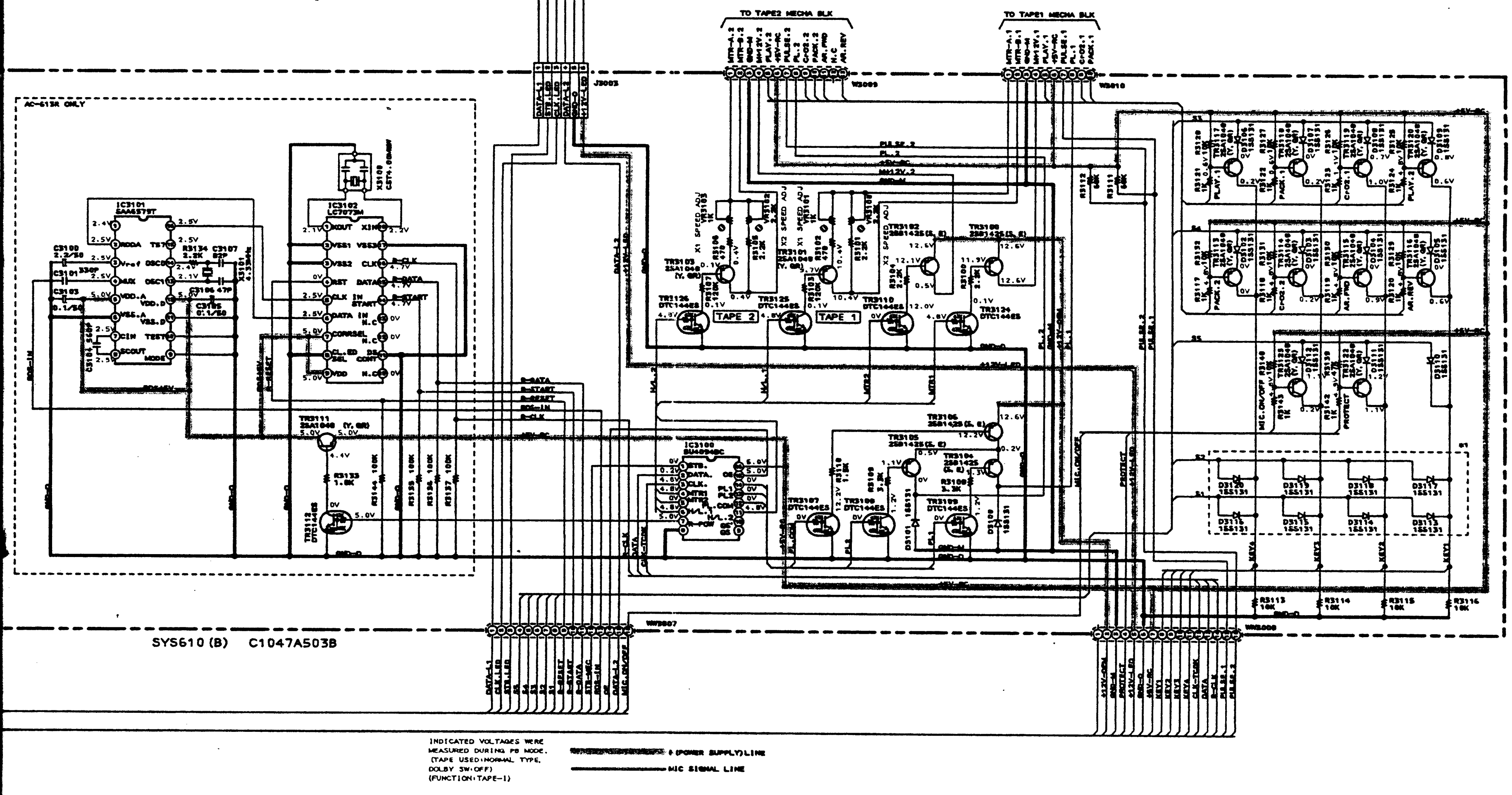
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


A
B
C
D
E
1
2
3
4
5
6
7
8
IC3001
IC3003
IC3004 TA2011S
IC3005
IC3006
IC3007
X3001
P3001
P3011
J3022
J3001
J3002
VR3001
SW3002
DOLBY NR
VOLUME
ROTARY ENCODER
CHASSIS EARTH
TIMER PROG
TIMER
SLEEP
MEMO
PRO TEST
REW
STOP
FWD
FF
TUNER
CD1
CD2
CD3
AUX
S-BASS
TAPE1
TAPE2
REC/PAUSE
DUB
POWER
VOL/BAL
KARA/DIMMER
SET
CH(L)
PAUSE
REV
F(L)
DPL-L
DPL-R
NORMAL
PHANTOM
3CH ST
CH(R)
REC
DUBX1
DUBX2
F(R)
BASS
FWD
AC-613R ONLY
SYS610(A) PCB C1050A503A
W3006
W3007A


SYS610 (D) PCB
C1050A503D
W3001
S19(CHG)
S18(OPEN/CLOSE)
KEYA
TS3300
TS3301
CHANGE
OPEN/CLOSE


IC3200
CHASSIS EARTH
REV 1
DECO L1
DECO R1
PHD 1
REV 2
DECO L2
DECO R2
PHD 2
SYS610 (C) PCB
C1050A503C
J3033

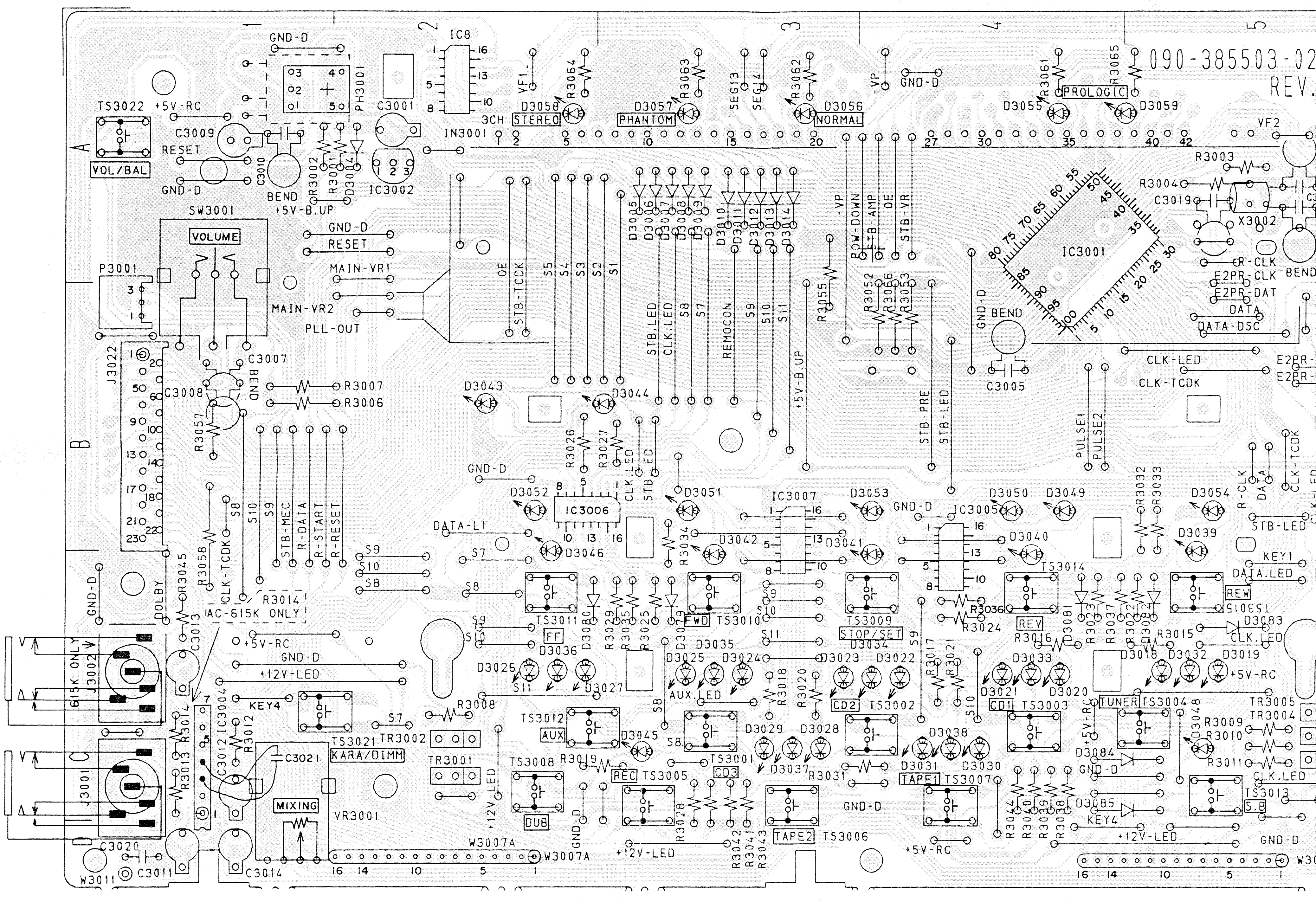
01	E1/E3/B1	E1 (RDS)	U5/U8/Y6	Y7	S1	A3	NOTE
D3113	x	x	x	O	O	x	VERSION
D3114	x	x	O	O	x	x	
D3115	x	x	x	x	O	O	
D3116	x	O	x	x	x	x	RDS
D3117	x	x	O	O	x	x	KARAOKE
D3118	x	x	x	x	x	x	CD ADJUST
D3119	O	O	x	x	x	x	BEAT CANCEL
D3120	O	O	O	O	O	O	PROLOGIC


TO TAPE2 MECHA BLK
TO TAPE1 MECHA BLK
W3009
W3010
J3003
AC-613R ONLY
IC3101
IC3102
IC3100
TAPE 2
TAPE 1
SYS610 (B) C1047A503B
W3007
W3008
DATA-L1
CLK.LED
STB.LED
S5
S4
S3
S2
S1
B-RESET
B-START
B-DATA
STD-SEC
RDS-IN
DE
DATA-L2
MIC.ON/OFF
+ (POWER SUPPLY) LINE
MIC SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE USED:NORMAL TYPE,
DOLBY SW:OFF)
(FUNCTION:TAPE-1)

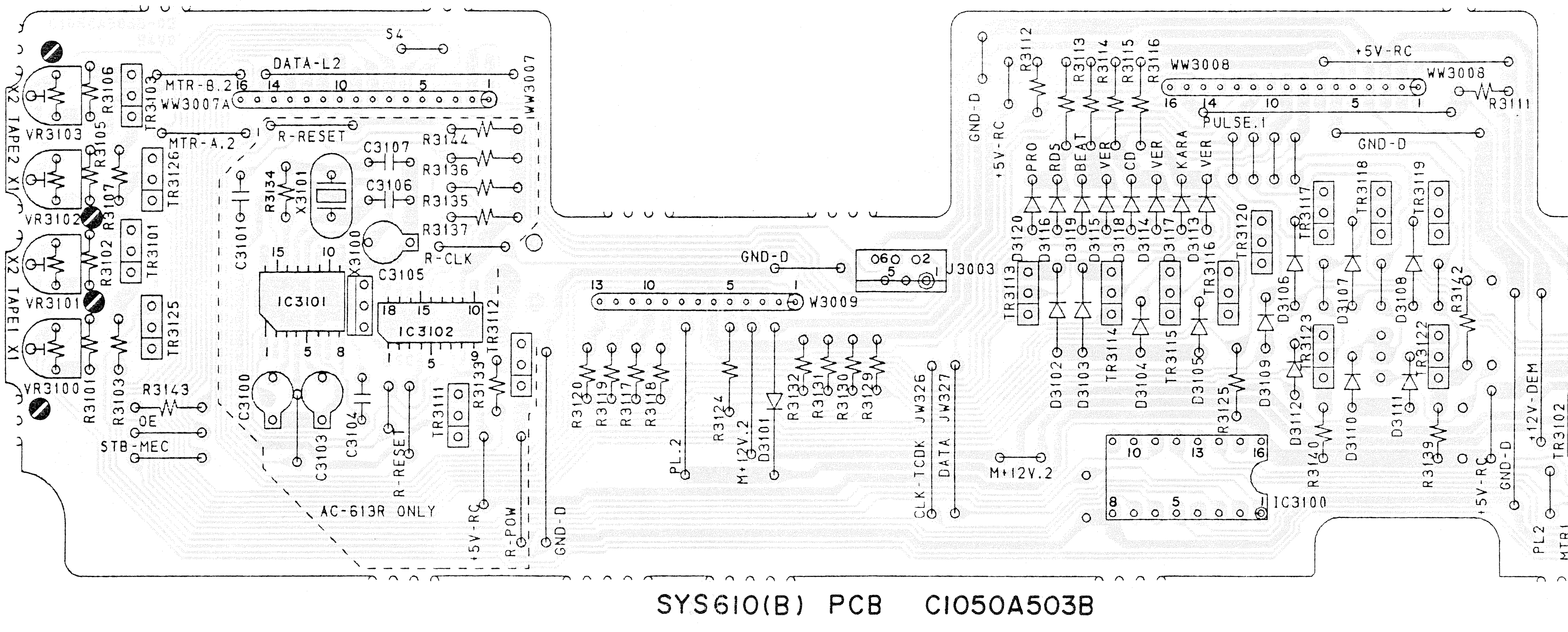
AC-610/613R/615K
SYSCON (600 SERIES)
SCHEMATIC DIAGRAM

No.6-6 C104706M
A0


090-385503-02
REV.
IC8
IC3001
IC3002
IC3004
IC3005
IC3006
IC3007
SW3001
VOLUME
VOL/BAL
TS3022
P3001
J3022
J3001
J3002
MIC
MIC
615K ONLY
AC-615K ONLY
STEREO
PHANTOM
NORMAL
PROLOGIC
FF
FWD
STOP/SET
REV
REW
AUX
REC
CD3
CD2
CD1
TUNER
TAPE1
TAPE2
DUB
KARA/DIMM
MIXING
S.B
VR3001
W3007A
X3002
MAIN-VR1
MAIN-VR2
PLL-OUT
GND-D
RESET
+5V-RC
+12V-LED
+5V-B.UP
BEND
DOLBY

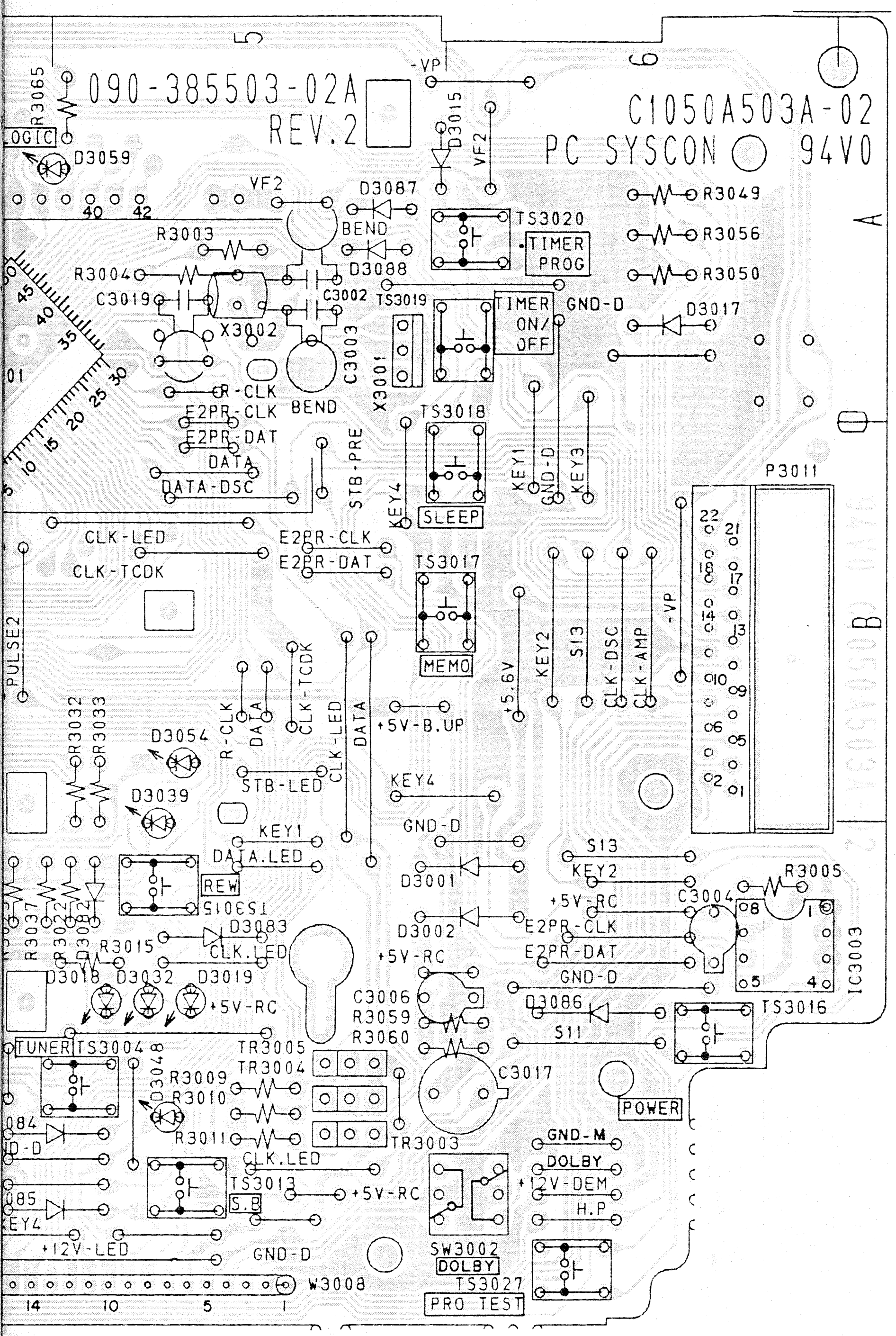
SYS610(A) PCB C1050A503A

NOTE : PART DIFFER
REFER TO SCH
PARTS INFORM

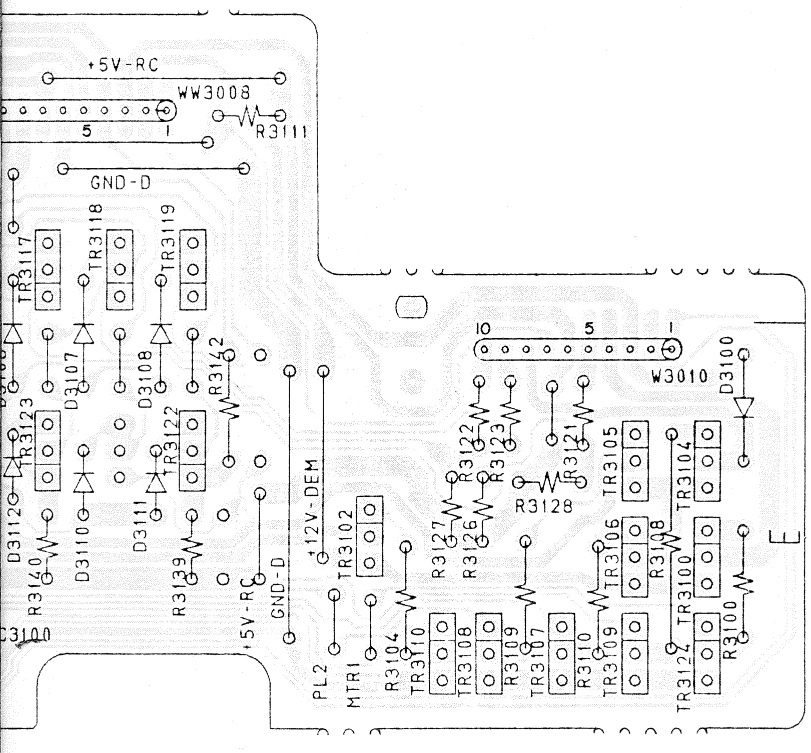

IC3100
IC3101
IC3102
X3101
WW3007A
WW3008
W3009
J3003
VR3100
VR3101
VR3102
VR3103
TAPE1
TAPE2
X1
X2
DATA-L2
MTR-B.2
MTR-A.2
R-RESET
R-CLK
STB-MEC
OE
AC-613R ONLY
+5V-RC
R-POW
GND-D
PULSE.1
PL.2
M+12V.2
CLK-TCDK
DATA
+12V-DEM

SYS610(B) PCB C1050A503B

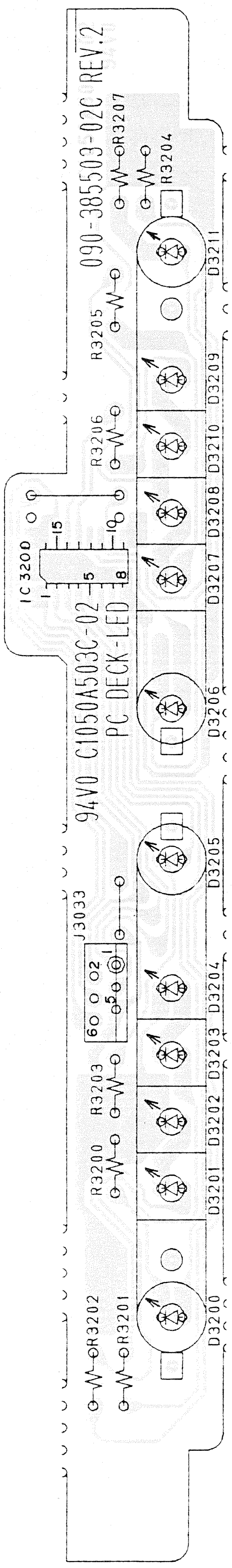
NOTE : PART DIFFER DEPENDING
REFER TO SCHEMATIC DIAG
PARTS INFORMATION.


090-385503-02A
REV.2
C1050A503A-02
PC SYSCON
94V0
TIMER PROG
TIMER ON/OFF
SLEEP
MEMO
REW
TUNER
POWER
DOLBY
PRO TEST
S.B
P3011
IC3003

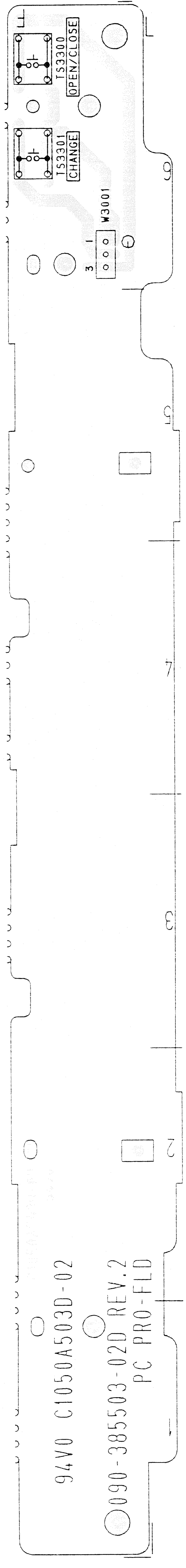
NOTE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.



TE : PART DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


94V0 C1050A503C-02
PC DECK-LED
090-385503-02C REV.2
IC3200
J3033

SYS610(C) PCB C1050A503C

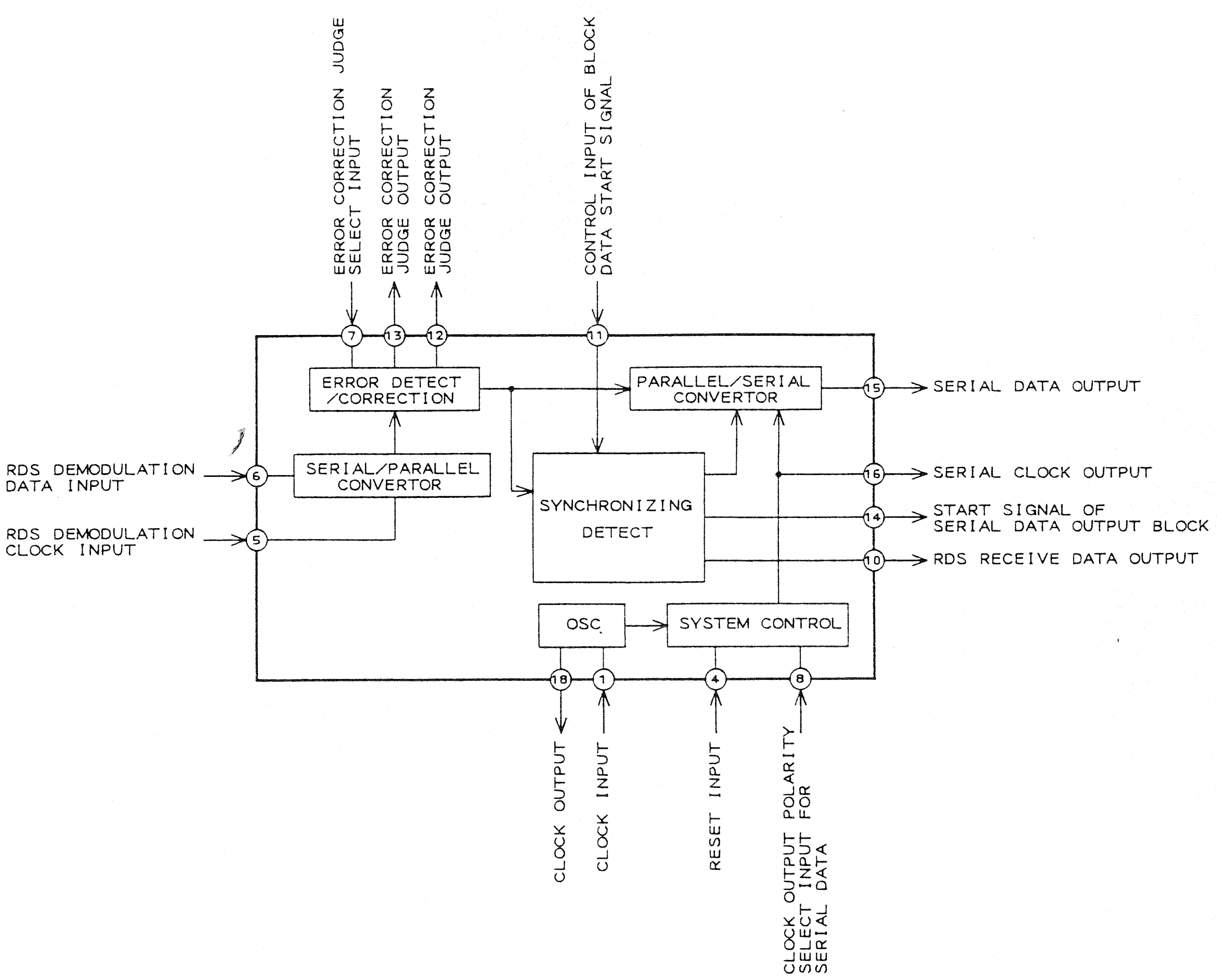

TS3300
OPEN/CLOSE
TS3301
CHANGE
W3001
94V0 C1050A503D-02
090-385503-02D REV.2
PC PRO-FLD

SYS610(D) PCB C1050A503D

CXA1782BQ (CD RF I-V AMP/RF AMP)

PIN No.	PORT NAME	I/O	FUNCTION
1	FEO	O	Focus drive output.
2	FEI	I	Focus error signal input.
3	FDFCT	I	Time constant capacitor connecting terminal at time of defect.
4	FGD	I	Connect condenser for Focus servo gain control.
5	FLB	I	Connect condenser for Focus servo correction.
6	FE-O	O	Focus drive output.
7	FE-M	I	FOCUS AMP Inverting input.
8	SRCH	I	Connect condenser for Focus search wave.
9	TGU	I	Connect condenser for Trackink gain select.
10	TG2	I	Connect condenser for Tracking gain select.
11	FSET	I	Terminal for peak setting for Focus tracking phase compensation.
12	TA-M	I	Tracking AMP Inverting input.
13	TA-O	O	Tracking drive output.
14	SL-P	I	Sled AMP non-inverting input.
15	SL-M	I	Sled AMP Inverting input.
16	SL-O	O	Sled drive output.
17	ISET	I	Focus search, Track jump and slide kick current input.
18	Vcc	–	+5 V
19	CLK	I	Clock signal input from the CD MI-COM.
20	XLT	I	Lutch signal input from the CD MI-COM.
21	DATA	I	Data signal input from the CD MI-COM.
22	XRST	I	RESET input.
23	C.OUT	O	Track count signal output.
24	SENS	O	FZC,DFCT,TZC,GAIN and BAL output.
25	FOK	O	Focus OK signal output.
26	CC2	I	Input terminal of DEFECT bottom hold output which is supplied through capcitor.
27	CC1	O	DEFECT bottom hold output terminal.
28	CB	I	DEFECT bottom hold capacitor connecting terminal.
29	CP	I	Terminal for connection of MIRR hold capacitor. (Non inverted input terminal of MIRR comparator.)
30	RF-I	I	Input terminal of RF summing AMP output which is supplied through a capacitor.
31	RF-O	O	RF summing AMP output.
32	RF-M	I	RF summing AMP inverted input terminal.
33	LD	O	APC AMP output terminal.
34	PHD	I	APC AMP input terminal.
35	PHD1	I	RF I-V AMP inverted input terminal (for photo diode A+C of pick up)
36	PHD2	I	RF I-V AMP inverted input terminal (for photo diode B+D of pick up)
37	FE-BIAS	I	Terminal for bias adjustment of focus error amp.
38	F	I	RF I-V AMP inverted input terminal (for photo diode F of pick up)
39	E	I	RF I-V AMP inverted input terminal (for photo diode E of pick up)
40	EI	–	Not used
41	VEE	–	GND
42	TEO	O	Tracking error amp output terminal. (E-F signal output.)
43	LPFI	I	BAL adjustment of comperator input terminal.
44	TEI	I	Tracking error input terminal.
45	ATSC	I	Window comperator input input terminal for ATSC detection.
46	TZC	I	Input terminal of tracking zero cross comparator.
47	TDFCT	I	Time constant capacitor connecting terminal at time of defect.
48	VC	O	(VCC+VEE)/2 DC voltage output terminal.

LC7073M (RDS DATA PROCESS)


ERROR CORRECTION JUDGE SELECT INPUT
ERROR CORRECTION JUDGE OUTPUT
ERROR CORRECTION JUDGE OUTPUT
CONTROL INPUT OF BLOCK DATA START SIGNAL
7
13
12
11
ERROR DETECT /CORRECTION
PARALLEL/SERIAL CONVERTOR
15
SERIAL DATA OUTPUT
RDS DEMODULATION DATA INPUT
6
SERIAL/PARALLEL CONVERTOR
RDS DEMODULATION CLOCK INPUT
5
SYNCHRONIZING DETECT
16
SERIAL CLOCK OUTPUT
14
START SIGNAL OF SERIAL DATA OUTPUT BLOCK
10
RDS RECEIVE DATA OUTPUT
OSC
SYSTEM CONTROL
18
1
4
8
CLOCK OUTPUT
CLOCK INPUT
RESET INPUT
CLOCK OUTPUT POLARITY SELECT INPUT FOR SERIAL DATA

CXD2508AQ (CD DIGITAL SIGNAL PROCCESS & SYSTEM CONTRO

Pin No.	PORT NAME	I/O	FUN
1	SCOR	O	H output when either sub code S
2	SBSO	O	Serial output of Sub P to W.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	Serial output of SUBQ 80 bit.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	Muteing control. (H : MUTE, L :
7	SENS	O	SENS output. Output to the OPE
8	XRST	I	System reset. Reset at L.
9	DATA	I	Serial data input from THE OPE
10	XLAT	I	Latch input from the OPERATIO edge of the pulse.)
11	CLOK	I	Serial data transmission clock in
12, 53	Vss	–	GND
13	SEIN	I	Sense input from SSP.
14	CNIN	I	Track jump number count signal
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latch output to SSP.
17	CLKO	O	Serial data transmission clock o
18	SLED SW	I	Innermost position ON/OFF dete
19	SPOB	I	Innermost position ON/OFF dete
20	SPOC	I	Innermost position ON/OFF dete
21	XLSL	I	X'tal selection input terminal. L w
22	LD ON/OFF	O	Laser diode ON/OFF control.
23	FOK	I	Focus OK input terminal. For SE
24	MON	–	Not used
25	MDP	O	Servo control for spindle motor.
26	MDS	–	Not used
27	LOCK	–	Not used
28	TEST	–	Regular GND for TEST terminal
29	FILO	O	Filter output for master PLL. (sl
30	FILI	I	Filter input for master PLL.
31	PCO	O	Charge pump output for master
33, 75, 76	AVss1 ~ 3	–	GND
34	CLTV	I	VCO control voltage input for m
36	RF	I	EFM signal input.
37	BIAS	I	Asymmetry circuir constant curr
38	ASYI	I	Asymmetry compilasion voltage
39	ASYO	O	EFM full swing output. (L = Vss,
40	ASYE	I	L : Asymmetry circuit OFF H :
41	WDCK	–	Not used
42	LRCK	O	D/A interface for 48 bit slot. LR
43	LRCKI	I	LR clock input to DAC.
44	PCMD	O	Serial data from D/A interface.
45	PCMDI	I	Audio data input to DAC.
46	BCK	O	Bit clock from D/A interface.
47	BCKI	I	Bit clock input to DAC.
48	GTOP	–	Not used
49	XUGF	–	
50	XPCK	–	
51	GFS	–	
52	RFCK	–	
54	C2PO	–	
55	XROF	–	
56	MNT3	–	
57	MNT1	–	
58	MNT0	–	
59	FSTT	–	
60	C4MR	–	
61	DOUT	O	Digital out terminal.
62	EMPH	O	H output when a playback disc
63	EMPHI	I	De-emphasis control input. (H
64	WFCK	O	WFCK (Write Frame Clock) ou
65	ZEROL	–	Not used
66	ZEROR	–	Not used
67, 79, 80	DTS1 ~ 3	–	GND
69	NLPWM	O	L-ch PWM output. (opposite p
70	LPWM	O	L-ch PWM output. (in-phase)
73	XTAI	I	33.8688 MHz X'tal oscillation c
74	XTAO	O	33.8688 MHz X'tal oscillation c
77	NRPWM	O	R-ch PWM output. (opposite p
78	RPWM	O	R-ch PWM output. (in-phase)

YSTEM CONTROL MI-COM)

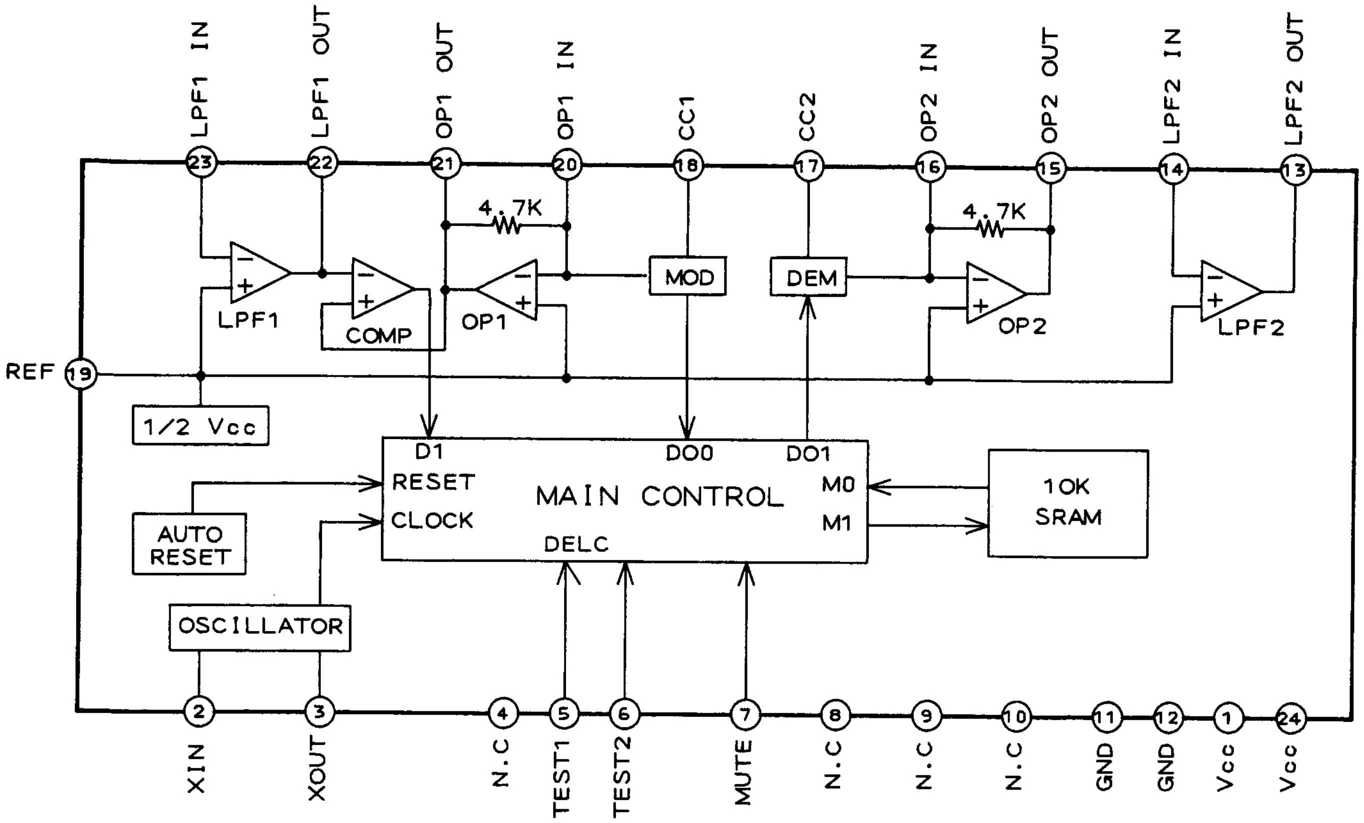
FUNCTION
n either sub code S0 or S1 is detected.
of Sub P to W.
r SBSO read out.
of SUBQ 80 bit.
r SQSO read out.
ol. (H : MUTE, L : CANCEL)
Output to the OPERATION MI-COM.
Reset at L.
put from THE OPERATION MI-COM.
om the OPERATION MI-COM. (Latching of serial data at falling ulse.)
ansmission clock input from the OPERATION MI-COM.
rom SSP.
umber count signal input.
utput to SSP.
tch output to SSP. (Latching at fallingedge of the pulse.)
ansmission clock output to SSP.
sition ON/OFF detection input of sled motor. (Input A)
sition ON/OFF detection input of sled motor. (Input B)
sition ON/OFF detection input of sled motor. (input C)
n input terminal. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
ON/OFF control.
out terminal. For SENS output and servo automatic sequencer.
l for spindle motor.
) for TEST terminal.
for master PLL. (slave = digital PLL)
or master PLL.
p output for master PLL.
voltage input for master.
nput.
circuir constant current input.
compilasion voltage input.
ng output. (L = VSS, H = VDD)
ry circuit OFF H : Asymmetry circuit ON.
e for 48 bit slot. LR clock f = Fs
ut to DAC.
rom D/A interface.
nput to DAC.
m D/A interface.
ut to DAC.
erminal.
hen a playback disc is emphasised. L output when no emphasis.
is control input. (H : ON, L : OFF)
te Frame Clock) output.
output. (opposite phase)
output. (in-phase)
Hz X'tal oscillation circuit input.
Hz X'tal oscillation circuit output.
output. (opposite phase)
output. (in-phase)

M38197MA-148/149FP (SYSTEM CONTROL MI-COM)

Pin No	PORT NAME	I/O	FUNCTION
1	PLL CLK	O	PLL clock signal output to the TUNER UNIT.
2	MAIN VR1	I	2 bit encoder input for electric volume control.
3	MAIN VR2		
4	PULSE 1	I	TAPE 1 reel pulse input.
5	PULSE 2	I	TAPE 2 reel pulse input.
6	LEVEL S	I	A/D input for surround level meter.
7	LEVEL C	I	A/D input for center level meter.
8	SPANA	I	A/D input for spectrum analyzer indication.
9	CLK LED	O	Clock output for LED section expansion IC.
10	PLL OUT	O	PLL control output to the TUNER UNIT.
11	STB FLD	O	Strobe pulse output to DOLBY PRO-LOGIC FLD drive IC.
12	CLK FLD	O	Clock output to DOLBY PRO-LOGIC FLD drive IC.
13	DATA FLD	O	Data output to DOLBY PRO-LOGIC FLD drive IC.
14	PHOTO IN	I	Input from the TRAY rotation position detect photo sensor.
15	CD XLAT	O	Latch output for the CD MI-COM.
16	CD CLK	O	Serial clock output to the CD MI-COM.
17	CD DATA	O	Serial data output to the CD MI-COM.
18	MODE SW	I	A/D input from the CD's open, close and clamp switches.
19	CLK TCDK	O	Clock output for controlling the expansion IC of the TUNER/CD/DECK section.
20	CD SQCK	O	SQCK clock output to the CD MI-COM.
21,85	N.C	–	No connection.
22	CD SQSO	I	SUBQ 80 bits serial input.
23	DATA DSC	O	Serial data output for controlling the DIGITAL SOUND CONTROL IC.
24	DATA	O	Serial data output to the expansion ICs (for KEY control & EVR ICs, etc.).
25	OSC PWM	O	Erasing OSC level control output.(PWM)
26	BOP	I	Blank output pulse input. (L : blank)
27	E^2PR DAT	I/O	EEP ROM serial data input/output.
28	E^2PR CLK	O	Serial clock output to EEP ROM.
29	CD SENS	I	Input pin for reading verious data from the CD MI-COM.
30	R CLK	I	Clock input from RDS data processor.
31	CLK DSC	O	Clock output to the DIGITAL SOUND CONTROLLOR.
32	REMOCON	I	Remote control signal input.
33	CLK AMP	O	Clock output to the expansion ICs (EVR, Key control, etc. among the PRE/MAIN AMP section).
34	CD SCOR	I	Sub code detect input from the CD MI-COM. (H : sub code 0 or 1 is detected)
35	RESET	I	Reset input
36	XC IN	I	32.768 kHz X'tal input for clock.
37	XC OUT	O	Output to the 32.768 kHz X'tal.
38	X IN	I	8.0 MHz X'tal input.
39	X OUT	O	Output to the 8.0 MHz X'tal.
40	GND-D	–	Digital ground.
41 - 44	KEY1 - 4	I	Key matrix input from the operation switches.
45 - 60	DIG 1 - 16	O	System FLD's grid drive output.
61 - 80	SEG 1 - 20	O	System FLD's segment drive output. (SEG 17~20 : 700 series models only)
81	POW DOWN	I	Back up voltage detection input. (H : normal, L : Power down)
82	STB AMP	O	Strobe pulse output for AMP section expansion IC.
83	OE	O	Output enable control for expansion ICs. (L : enable, H : expansion IC output → high impedance).
84	STB VR	O	Strobe pulse output for EVR (electric volume) IC.
86	STB TCDK	O	Strobe pulse output for TUNER/DECK/CD section expansion ICs.
87	STB PRE	O	Strobe pulse output for PRE AMP section expansion IC.
88	STB MEC	O	Strobe pulse output for DECK MECHA. section expansion IC.
89	R DATA	I	Data input from RDS data processor.
90	R START	I	Start signal input from RDS data processor.
91	VCC	–	+5 V power supply.
92	R RESET	O	Reset output to RDS error correction IC. (L : reset)
93	STEREO	I	A/D input for the "STEREO" indicator.
94	TUNED	I	A/D input for the "TUNED" indicator.
95	STB LED	O	Strobe pulse output for LED section expansion IC.
96	PLL IN	I	PLL control input from the tuner unit.
97	PLL CE	O	PLL chip enable output to the tuner unit.
98	–VP	I	Negative power supply for FLD blanking.
99	VSS	–	To be grounded.
100	VREF	I	Reference voltage input. (+5 V)

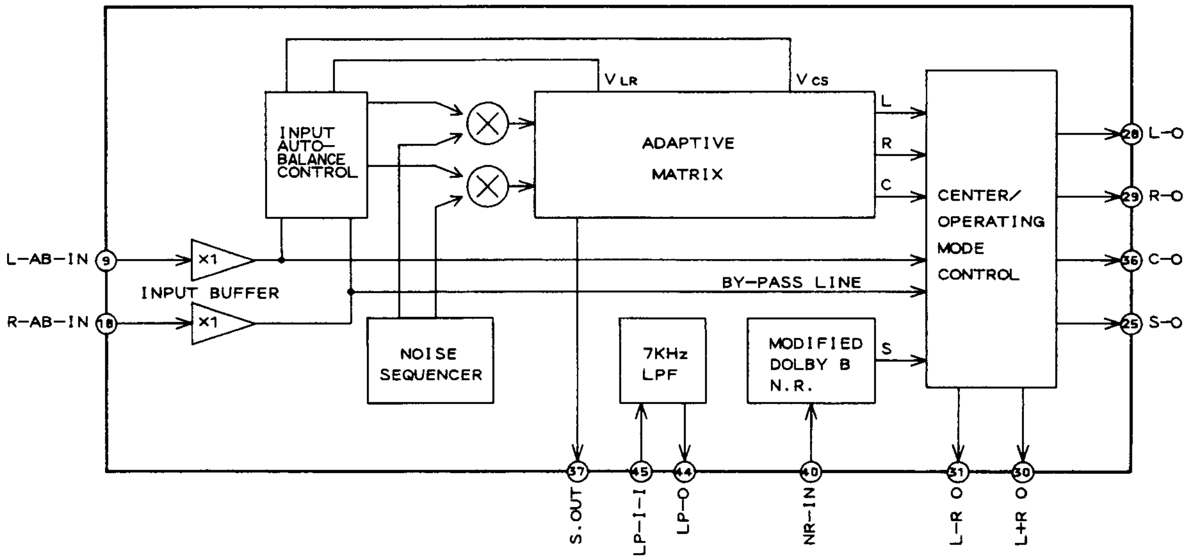
M62422FP (SOUND CONTROLLER)

Pin No	PORT NAME	I/O	FUNCTION
1	CLOCK	I	Clock signal input pin for data transmission.
2	DATA	I	Control data input pin.
3	DVDD	–	Power supply for internal logic circuit.
4	VCUT	–	Capacitor connecting pin for vocal cut.
5	SUROUT	O	This pin outputs surround (L-R or L+R) signal and vocal cut signal.
6	IN1	I	Channel 1 input pin.
7	KEYCON1	O	Output pin to the key control circuit.
8	MIC IN1	I	Mic signal input pin during KARAOKE function.
9	INBASS1	I	BASS resonant bufferring AMP input pin.
10	NFBASS1	O	BASS resonant bufferring AMP output pin.
11	FBASS1	–	BASS BPF (resonant AMP) connecting pin.
12	INMID1	I	MID resonant bufferring AMP input pin.
13	NFMID1	O	MID resonant bufferring AMP output pin.
14	FMID1	–	MID BPF (resonant AMP) connecting pin.
15	FTRE1	–	TREBLE BPF connecting pin.
16	REC OUT1	O	Channel 1 REC OUT pin.
17	FBB1	I	BASS boost BPF (resonant AMP) connecting pin.
18	NFBB1	O	BASS boost resonant bufferring AMP output pin.
19	INBB1	I	BASS boost resonant bufferring AMP input pin.
20	OUT1	O	Channe 1 output pin.
21	AGND	–	Internal analog circuit grounding pin.
22	AVss	–	Negative power supply pin for internal analog circuit.
23	OUT2	O	Channe 2 output pin.
24	INBB2	I	BASS boost resonant bufferring AMP input pin.
25	NFBB2	O	BASS boost resonant bufferring AMP output pin.
26	FBB2	–	BASS boost BPF (resonant AMP) connecting pin.
27	REC OUT2	O	Channel 2 REC OUT pin.
28	FTRE2	–	TREBLE BPF connecting pin.
29	FMID2	–	MID BPF (resonant AMP) connecting pin.
30	NFMID2	O	MID resonant bufferring AMP output pin.
31	INMID2	I	MID resonant bufferring AMP input pin.
32	FBASS2	–	BASS BPF (resonant AMP) connecting pin.
33	NFBASS2	O	BASS resonant bufferring AMP output pin.
34	INBASS2	I	BASS resonant bufferring AMP input pin.
35	MIC IN2	I	Mic signal input pin during KARAOKE function.
36	KEYCON2	O	Output pin to the key control circuit.
37	IN2	I	Channel 2 input pin.
38	SUR R	–	Time constant setting capacitor connectig pin for the surround circuit.
39	SUR C	–	Time constant setting capacitor connectig pin for the surround circuit.
40	AVDD	–	Positive power supply pin for internal analog circuit.
41	DGND	–	Internal logic circuit grounding pin.
42	N.C	–	No connection.


LPF1 IN
LPF1 OUT
OP1 OUT
OP1 IN
CC1
CC2
OP2 IN
OP2 OUT
LPF2 IN
LPF2 OUT
23
22
21
20
18
17
16
15
14
13
4.7K
4.7K
LPF1
COMP
OP1
MOD
DEM
OP2
LPF2
REF
19
1/2 Vcc
D1
RESET
CLOCK
MAIN CONTROL
DO0
DO1
M0
M1
DELC
10K SRAM
AUTO RESET
OSCILLATOR
2
3
4
5
6
7
8
9
10
11
12
1
24
XIN
XOUT
N.C
TEST1
TEST2
MUTE
N.C
N.C
N.C
GND
GND
Vcc
Vcc

PIN No.	PORT NAME	I/O	FUNCTION
1	VDD	–	+5 V power supply for digital section.
2	X IN	I	X'tal OSC input.
3	X OUT	–	X'tal OSC output.
4	NC	–	No connection.
5	TEST 1	I	Test pin (fixed H in the normal condition).
6	TEST 2	I	Test pin (fixed L in the normal condition).
7	MUTE	I	Mute control input (L : mute).
8 ~ 10	NC	–	No connection.
11	D.GND	–	Digital ground.
12	A.GND	–	Analog ground.
13	LPF2 OUT	O	Constructs the output side low pass filter from the externally connected capacitor & resistor.
14	LPF2 IN	I	
15	OP2 OUT	O	Constructs the integrator for demodulation from the externally connected capacitor & resistor.
16	OP2 IN	I	
17	CC2	–	Current control for demodulator ADM control.
18	CC1	–	Current control for modulator ADM control.
19	REF	–	Analog reference voltage (1/2 Vcc).
20	OP1 IN	I	Constructs the integrator for modulation from the externally connected capacitor & resistor.
21	OP1 OUT	O	
22	LPF1 OUT	O	Constructs the input side low pass filter from the externally connected capacitor & resistor.
23	LPF1 IN	I	
24	Vcc	–	+5 V analog power supply.

NJM2177A FB3 (DOLBY PRO LOGIC SURROUND DECODER)

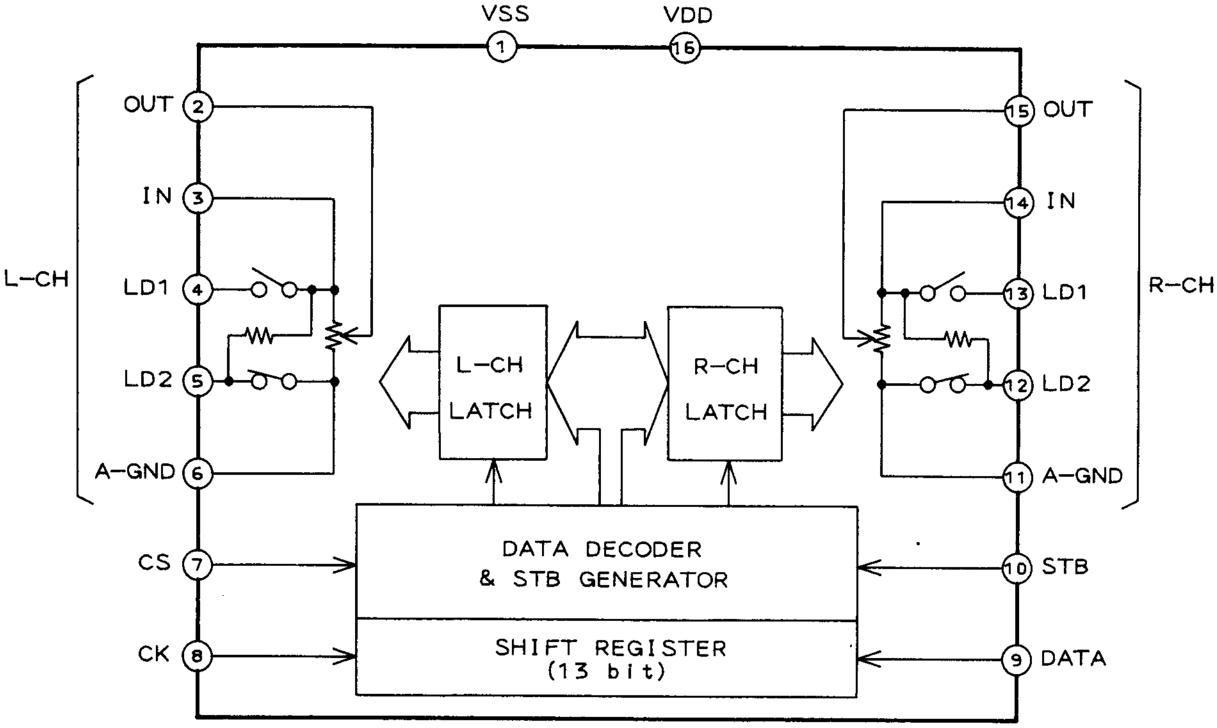


INPUT AUTO-BALANCE CONTROL
VLR
VCS
ADAPTIVE MATRIX
L
R
C
CENTER/ OPERATING MODE CONTROL
L-AB-IN 9
R-AB-IN 18
×1
×1
INPUT BUFFER
BY-PASS LINE
NOISE SEQUENCER
7KHz LPF
MODIFIED DOLBY B N.R.
S
28 L-O
29 R-O
36 C-O
25 S-O
37 S.OUT
45 LP-I-I
44 LP-O
40 NR-IN
31 L-R O
30 L+R O

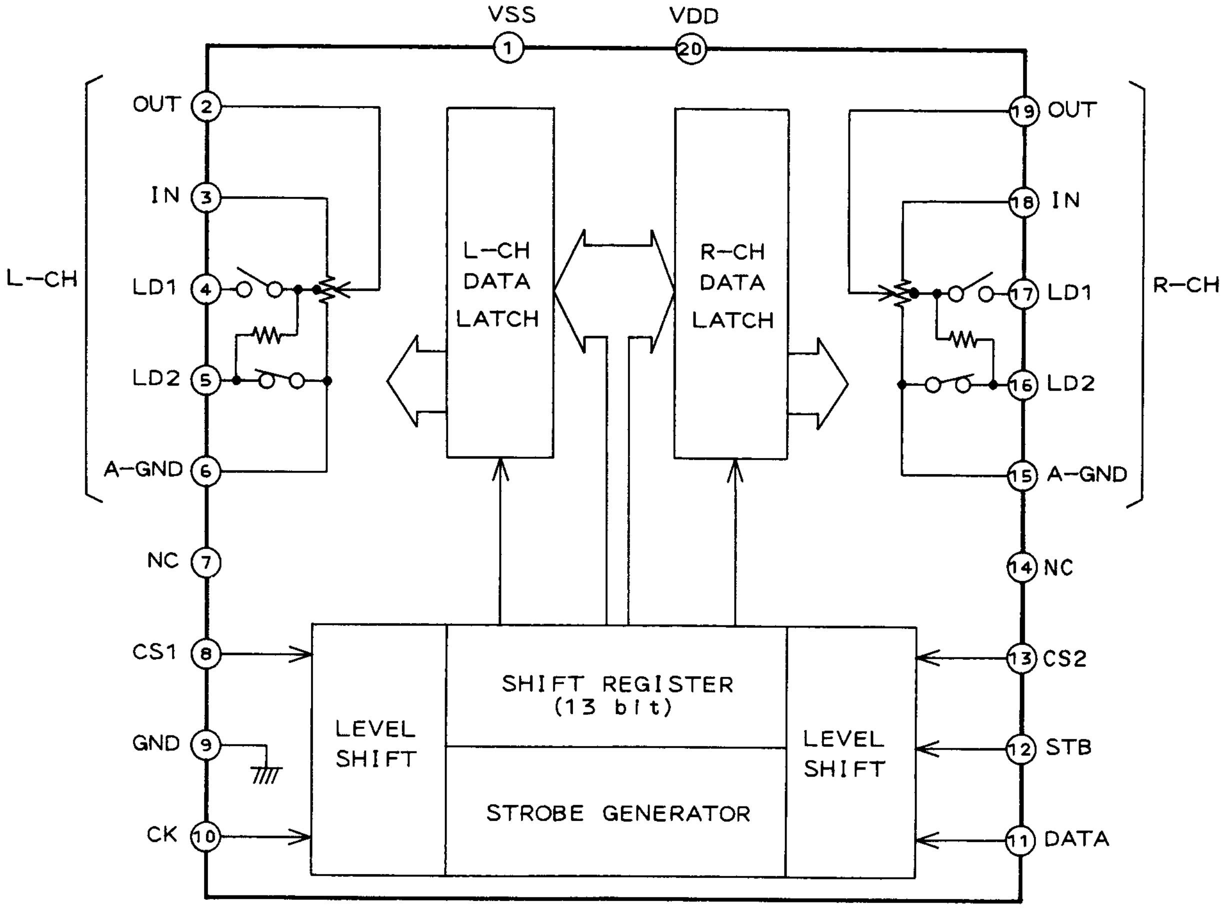
SAA6579T (RDS DEMODULATOR)

PIN No	PORT NAME	I/O	FUNCTION
1	QUAL	O	QUALITY INDICATION OUTPUT
2	RDDA	O	RDS DATA OUTPUT
3	VREF	—	REFERENCE VOLTAGE OUTPUT
4	MUX	I	MULTIPLEX SIGNAL INPUT
5	VDD	—	+5 V SUPPLY VOLTAGE FOR ANALOG PART
6	VSS	—	GND FOR ANALOG PART
7	CIN	I	SUBCARRIER INPUT TO COMPARATOR
8	SCOUT	O	SUBCARRIER OUTPUT OF RECONSTRUCTION FILTER
9	MODE	I	OSCILLATOR MODE / TEST CONTROL INPUT
10	TEST	I	TEST ENABLE INPUT
11	VSS	—	GND FOR DIGITAL PART
12	VDD	—	+5 V SUPPLY VOLTAGE FOR DIGITAL PART
13	OSC1	I	OSCILLATOR INPUT
14	OSC0	O	OSCILLATOR OUTPUT
15	T57	O	57 kHz CLOCK SIGNAL OUTPUT
16	RDCL	O	RDS CLOCK OUTPUT

TC9260P (ELECTRIC VOLUME CONTROL)


VSS
VDD
1
16
OUT 2
IN 3
L-CH
LD1 4
LD2 5
A-GND 6
CS 7
CK 8
L-CH LATCH
R-CH LATCH
DATA DECODER & STB GENERATOR
SHIFT REGISTER (13 bit)
15 OUT
14 IN
13 LD1
R-CH
12 LD2
11 A-GND
10 STB
9 DATA

TC9412P (ELECTRIC VOLUME CONTROL)


VSS
VDD
1
20
OUT 2
IN 3
L-CH
LD1 4
LD2 5
A-GND 6
NC 7
CS1 8
GND 9
CK 10
L-CH DATA LATCH
R-CH DATA LATCH
LEVEL SHIFT
SHIFT REGISTER (13 bit)
STROBE GENERATOR
LEVEL SHIFT
19 OUT
18 IN
17 LD1
R-CH
16 LD2
15 A-GND
14 NC
13 CS2
12 STB
11 DATA